

CA Nos. 24-3077, 24-3663, 24-6045

IN THE UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

UNITED STATES OF AMERICA,

Plaintiff-Appellee,

v.

JERRY NEHL BOYLAN,

Defendant-Appellant.

DC NO. CR 2:22-CR-00482-GW-1

APPELLANT'S OPENING BRIEF

APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE
CENTRAL DISTRICT OF CALIFORNIA

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United States District Judge

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I. INTRODUCTION AND QUESTIONS PRESENTED

On September 2, 2019, the *Conception*, a live-aboard dive vessel owned and operated by Truth Aquatics, Inc. (“TA”), caught fire off the coast of Santa Cruz Island. The vessel’s captain, appellant Jerry Nehl Boylan, and four crewmembers tried to rescue the 33 passengers and one crewmember trapped in the below-deck bunkroom, but were no match for the bewilderingly fast-moving blaze. The events captured national media attention, including after it was revealed that shortcomings in the construction of the *Conception* and like vessels, as well as inadequate Coast Guard regulations, contributed to the tragedy. These findings prompted significant regulatory and industry reforms. Still, the government focused its investigation on Boylan. A seasoned captain known to never take shortcuts where safety was concerned, Boylan was charged and convicted of one count of 18 U.S.C. § 1115 (misconduct/neglect of ship officer, a.k.a., seaman’s manslaughter) after a trial plagued by legal and evidentiary errors.

Boylan was accused of “act[ing] with a wanton or reckless disregard for human life by engaging in misconduct, gross negligence, and inattention to duties on such vessel[,]” by, among other things: failing to maintain a roving patrol (46 C.F.R. § 185.410); failing to conduct sufficient fire drills (*id.* § 185.524); inadequate crew training on emergencies, fires, and firefighting (*id.* §§ 185.420, 185.510); and insufficiently directing/instructing crewmembers during the fire;

“thereby caus[ing]” death. (2-ER-340-44)¹ Thus, the government’s sole theory was negligent homicide-by-omission—a charge presenting distinctive problems of proof. But those burdens were substantially and improperly eased by a series of erroneous rulings culminating in Boylan’s conviction, presenting these questions for appeal:

(A)(1). An important question at Boylan’s trial should have been whether Boylan acted with gross negligence preceding the accident. But the trial jury wasn’t required to answer this question; instead, it was permitted to convict Boylan based on mere evidence of “misconduct.” The court instructed that various civil regulatory violations could meet that element, and then invented a convoluted multi-factor test that it told the jury to apply to assess the regulations’ “significance[.]” Did the court err by permitting—and encouraging—a felony conviction for mere regulatory violations, rather than gross—or even ordinary—negligence?

(A)(2). Another central issue was whether Boylan’s alleged omissions actually caused—*i.e.*, were the “but-for” cause of—death. Although recent Supreme Court guidance emphasizes the foundational nature of this requirement for criminal liability, *see, e.g., Burrage v. United States*, 571 U.S. 204, 210 (2014),

¹ Citations to the 27-volume excerpts of record are indicated by “ER” with the volume’s relevant bates-numbered page.

neither the grand jury nor the trial jury resolved this question. They considered only whether Boylan *proximately* caused death: a fundamentally different question. Did the court err by denying Boylan's motion to dismiss and request to instruct the trial jury regarding actual (but-for) causation?

(B). Recognizing expert witnesses' sway on juries, the Federal Rules of Evidence provide various safeguards against such testimony's misuse. Here, however, the court permitted the government to bypass several of those rules. Did the court abuse its discretion by permitting government experts to opine on the ultimate legal issue of causation and other matters, without any preliminary assessment of their testimony's reliability, proof of adequate qualification, or showing that their methods were reliably applied to the facts?

(C). Did these errors' cumulative effect deprive Boylan of a fair trial?

II. STATEMENT OF ADDENDUM

Pertinent authority is included in the attached addendum.

III. STATEMENT OF JURISDICTION

These consolidated appeals arise from a judgment entered by the Honorable George Wu, convicting Boylan of 18 U.S.C. § 1115 and sentencing him to 48 months' imprisonment. (1-ER-2-11) Boylan timely appealed. (16-ER-3431-46) The district court had jurisdiction under 18 U.S.C. § 3231. This Court has jurisdiction under 28 U.S.C. § 1291.

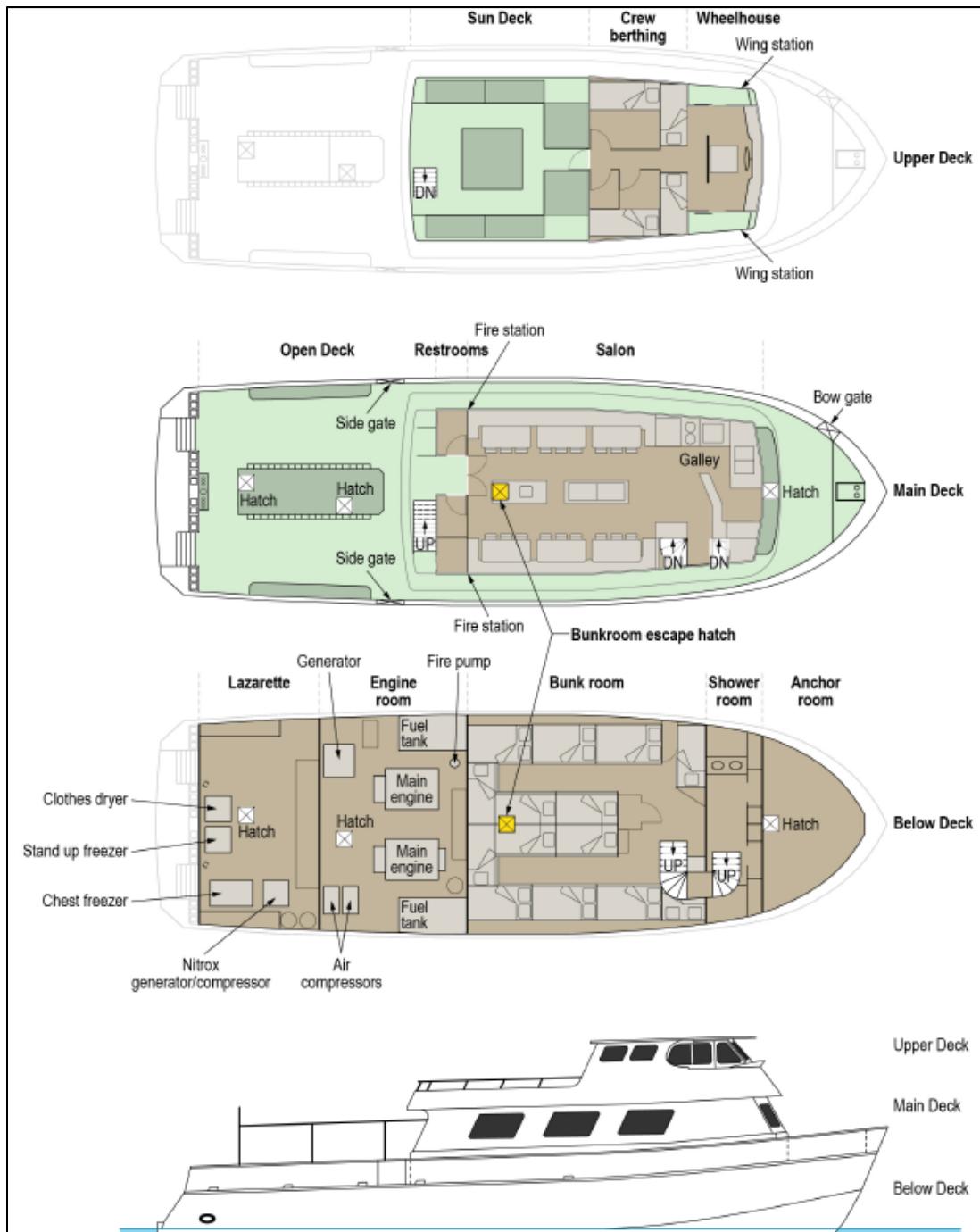
IV. STATEMENT OF BAIL STATUS

Boylan was granted bond pending appeal and is not in custody.

V. STATEMENT OF THE CASE

A. The Timeline: Fire Consumes the *Conception* in Under 39 Minutes.

The trial evidence established an undisputed timeline of the *Conception* tragedy. Galley-hand Michael Kohls testified that, the morning of the accident, he woke up at 1:30 a.m., walked down from his sleeping quarters in the wheelhouse, and cleaned the galley and salon. (7-ER-1395, 1431-32) Afterwards, he went upstairs to sleep, observing the clock read 2:35 a.m. (7-ER-1432, 1471-72), and “nothing seemed amiss or unsafe[.]” (7-ER-1450)



The *Conception* (16-ER-3342)

Kohls eventually heard noises he recognized as someone dragging a chair and shutting a bathroom door. (7-ER-1438, 1473) Minutes later, he heard yelling,

hurriedly left his bed, and saw a “glow.” (7-ER-1438-40, 1475-76)² Kohls immediately realized the “glow” was fire, and “yelled” “‘fire.’” (7-ER-1440, 1478) He then ran aft onto the sundeck and realized the only staircase to the main deck was inaccessible because the bottom few rungs (and adjacent bathroom) were on fire. (7-ER-1440-51; *see* 7-ER-1342) He ran back to the wheelhouse, yelling “‘fire[,]’” before jumping over railings onto the main deck. (7-ER-1441-42) He went to the salon—the room into which both exits from the below-deck bunkroom emptied—to access a fire extinguisher, but it was “engulfed[.]” (7-ER-1442-43, 1490-92)

Finding the salon inaccessible, Kohls ran forward toward the bow (front), along the port-side walkway, encountering Sims and deck-hand Milton French. (7-ER-1444-45) The starboard-side walkway was already impassable (7-ER-1493), and the port-side walkway became impassable immediately after Kohls ran down it. (7-ER-1445, 1496)

French testified he was asleep in the wheelhouse when he heard “shouts of ‘fire.’” (7-ER-1293-94) He then observed 15-foot flames coming from the main deck over the starboard-side rails of the upper deck, and that the staircase down to the main deck was impassable. (7-ER-1294-95, 1340-42; *see* 9-ER-1750-51, 1803-

² Galley-hand Ryan Sims testified to hearing a “pop and crackle”—like “a Roman candle”—before Kohls jumped from bed. (8-ER-1534-35)

06 (second captain Cullen Molitor's similar descriptions)) He returned to the wheelhouse, where Boylan held a "five-second...huddle up[,]" telling the crewmembers to "get to the main deck" and rescue those below-deck. (7-ER-1295) Sims, French, and Molitor climbed down, but the aftward port-side walkway was impassable. (7-ER-1295-97)

After directing the crew's rescue efforts, Boylan stayed in the wheelhouse—while smoke and fire engulfed it—and issued a mayday call, stating he couldn't breathe. (5-ER-986-88; 6-ER-1055; *see* 8-ER-1531-35 (Sims couldn't see through "overwhelming" wheelhouse smoke)) French observed Boylan on the radio from the main deck. But within ten seconds, French could no longer see Boylan through the smoke filling the wheelhouse. Boylan jumped into the water, followed by a "trail of smoke[,]" "seemingly...on fire." (7-ER-1299, 1347-48; 9-ER-1818) Kohls heard Boylan yell from the wheelhouse, "[o]h, my god"; Kohls "thought he was burning[.]" (7-ER-1446-47) Once Boylan surfaced, he said, "[o]h, my God, [o]h, my God. All those people," and began "swimming to the stern [back-end][.]" (7-ER-1447)

French and Molitor jumped in and, with Boylan, reboarded at the stern. (7-ER-1300-03, 1307) But the salon and the adjacent firehose stations were "completely engulfed[.]" (7-ER-1303) Despite extensive efforts over the "few minutes" since waking up, they couldn't fight the "raging inferno[.]" (7-ER-1303-

07, 1362-63) They maintained a distance because the *Conception* lacked fire-protective clothing. (7-ER-1352-53) Having exhausted onboard firefighting options, they traveled by skiff to another nearby boat. (5-ER-989; 7-ER-1356-58) From there, the *Conception* appeared swallowed by “ridiculous[ly]” high, 100-foot flames. (7-ER-1360-61) Detonations and explosions were audible. (*Id.*; 9-ER-1832) The fire moved so “[un]believ[ably]…fast[,]” recounted Sims, that it seemed “possessed[.]” (8-ER-1534)

Thus, 39 minutes elapsed between Kohls’ looking at the clock at 2:35 a.m., when “nothing seemed amiss or unsafe,” and Boylan’s 3:14 call, by which time fire had inundated the boat.

B. “[H]indsight is 20/20”: An Industry Caught Off-Guard.

The primary disputes at trial were whether Boylan was grossly negligent for failing to post a nighttime roving watch or to train or supervise crewmembers, and whether those alleged omissions had a sufficient causal relationship to the deaths. To support its contentions, the government presented evidence of the Bureau of Alcohol, Tobacco, and Firearms (“ATF”) and National Transportation Security Board (“NTSB”) investigations into the accident. Those investigations were largely inconclusive. But the trial testimony reflected one consistent theme: Boylan went above and beyond to ensure the safety of his vessel and passengers, consistent with Coast Guard requirements, industry standards, and TA’s policies

and resources. The unfortunate reality was that the live-aboard industry was entirely unprepared for an accident of this nature, as the sweeping industry changes in response showed.

1. “Roving patrols” were uncommon before the *Conception* tragedy.

Multiple witnesses explained the concept of a “roving patrol”—the idea that “that when a vessel is carrying passengers, you should have somebody awake and moving around making sure the boat is safe[.]” (7-ER-1267-68; *see, e.g.*, 8-ER-1588-89) The *Conception*’s Certificate of Inspection required that “a member of the vessel’s crew shall be designated by the master as a roving patrol at all times, whether or not the vessel is underway, when the passenger’s bunks are occupied.” (5-ER-928-30; 16-ER-3339) The jury also saw a Coast Guard regulation stating:

The owner, charterer, master, or managing operator of a vessel carrying overnight passengers shall have a suitable number of watchmen patrol throughout the vessel during the nighttime, whether or not the vessel is underway, to guard against, and give alarm in case of, a fire, man overboard, or other dangerous situation.

46 C.F.R. § 185.410; (16-ER-3344).

There was less consistent testimony about what constituted a proper roving patrol. Brian Priddin testified that a “typical[]” roving patrol is “every 20 minutes” based on his experience working on far larger vessels than the *Conception*. (8-ER-1608, 1670-71) Government expert Captain Sean Tortora explained that, though the regulations didn’t specify how often a roving patrol should circulate (11-ER-

2375-76), the “industry standard” was “continuous or at least hourly.” (11-ER-2381, 2420)

There was, however, pre-accident industry consensus that nighttime roving patrols were nonstandard on smaller vessels, *even if* required by regulation or licensure. The regulation wasn’t on the Coast Guard’s radar: it wasn’t on the inspection checklist or required to be logged, and vessels including the *Conception* passed inspections regardless of compliance. (12-ER-2649-51, 2665-67, 2672-74, 2690-93)³ Indeed, several veteran captains on local live-aboards testified they were previously unfamiliar with the requirement and that TA’s practices comported with the industry’s. (12-ER-2501-05, 2550-51, 2556; 13-ER-2866, 2874) Unless trips were infrequent or they had a family business, operators were too busy and resource-strapped to implement night watches, instead prioritizing the crew’s alertness for daytime emergencies. (10-ER-2160, 2171-78, 2180-81; 12-ER-2571-73)⁴ Industry practices changed after the accident (12-ER-2577-81; *see* 11-ER-2407), but, unfortunately, “[h]indsight is 20/20.” (12-ER-2513)

³ Before the fire, the Coast Guard didn’t require *any* hands-on testing or firefighting courses to captain a *Conception*-sized vessel. (11-ER-2339; 12-ER-2494-95) Nor was the Coast Guard trained on the hazard of the lithium-ion batteries of the type charging on power strips aft of the salon before the accident. (7-ER-1286; 9-ER-1744, 1864; 12-ER-2628-29)

⁴ Boylan conducted night watches whenever conditions, like bad weather, warranted. (12-ER-2556, 2558)

2. Boylan trained and drilled his crew, and he and the crew responded to the fire as they had been trained and drilled to do.

Had further safety measures, including a roving patrol, been asked of Boylan, he would've complied. Trial witnesses described Boylan as "very hands-on" when it came to safety (7-ER-1332; *see* 12-ER-2603-2608), whether by training crewmembers (12-ER-2555; 13-ER-2922-23, 2930-34), or ensuring passengers received their required safety briefing, advising them on means of egress during an emergency, including via the bunkroom's escape hatch. (7-ER-1282-83, 1462-63; 9-ER-1790; 11-ER-2466-67; 12-ER-2603) Boylan familiarized crewmembers with the boat's layout and fire equipment. (11-ER-2462-63; 12-ER-2498-99) French testified that he operated this equipment "many times" (7-ER-1314), knowing enough to train other testifying witnesses, at Boylan's instruction. (13-ER-2912-19, 2923) Molitor, a licensed captain, was experienced in boats and their fire equipment, and was familiar with the *Conception*'s. (8-ER-1687; 9-ER-1788)⁵ To reinforce the crew's knowledge, Boylan performed all Coast Guard-required fire drills and recorded them in Coast Guard-inspected logbooks, including in 2019 when the *Conception* passed inspection. (11-ER-2462; 12-ER-

⁵ Government witness Matthew Curto, the second captain on other *Conception* trips, testified to discussing emergency procedures and equipment with Boylan. (7-ER-1587-88, 1591, 1599-1601)

2612-14, 2625, 2636, 2649-58) These drills, which required crew participation (7-ER-1325-26), involved a full simulation of the fire hoses. (11-ER-2462; 12-ER-2636, 2651-57) Any inadequacy would've failed inspection. (12-ER-2613-14)

Boylan always did what TA asked of him, but TA's resources were limited and Boylan made the best of what he had. (*See* 5-ER-921-25 (describing Boylan's training responsibilities)) Employees worked 16-hour days and TA allotted no time for training. (8-ER-1663-67, 1678; 11-ER-2463-65; 13-ER-2956) Training only took place onboard during breaks; anything more required TA's approval. (11-ER-2435-38, 2463; 12-ER-2508, 2534) TA limited training to an "as needed" basis (6-ER-1073), and ignored crewmember training requests. (11-ER-2432-38) Nonetheless, Boylan volunteered time to teach those under his stewardship (12-ER-2536-37), and organized meetings to discuss improvements and maintenance. (13-ER-2940-41)

Ultimately, however, no amount of training would've quenched the rapidly-spreading fire. The crew responded consistent with the *Conception*'s station bill, drafted by TA and Coast Guard-approved, which defined crewmembers' emergency duties. (5-ER-932-33; 16-ER-3341; 11-ER-2447-52) Molitor and French sought the fire hoses and Kohls and Sims the fire extinguishers, while Boylan made the mayday call and directed fire-suppression efforts. (7-ER-1392, 1454-57; 9-ER-1758-59)

But fire overwhelmed those efforts, with smoke filling the wheelhouse “within seconds” of the crew’s awakening (9-ER-1802), so severe that Sims had to jump out before heeding Boylan’s orders to retrieve the fire extinguishers. (8-ER-1527, 1532-33) The fire hoses had to be fully uncoiled before use (13-ER-2918-19), which would’ve been impractical, even were they accessible through the breakneck flames.

C. A Superficial “Link” in the “Chain”: the Government Deploys Defective Expert Testimony to Shore Up Its Case.

To attempt to show negligence and causation despite the crew’s safety efforts, the government presented expert testimony from Jonathan Butta, ATF fire research engineer (9-ER-1901); Derek Hill, ATF fire investigator (10-ER-2034); and Captain Sean Tortora, a U.S. Merchant Marine Academy assistant professor. (11-ER-2210)

1. Pretrial litigation regarding the fire-origin opinions

The case had a clear causation problem: the government needed to show the fire spread quickly enough to fit the crewmembers’ timeline, but slowly enough that some intervention might’ve saved lives. It set off to solve this problem by noticing Butta and Hill as experts on the fire’s origin. (24-ER-5564, 5756-74) As explained below, Butta and Hill purported to design testing to support the government’s theory that the fire started in a trash can under the stairway leading up to the top deck and burned slowly enough that a roving patrol or another safety

measure could have extinguished it before it spread. The defense, however, argued the fire burned so quickly that any shortcoming on Boylan's part couldn't have caused death, and that Butta and Hill too easily discounted a rapidly-moving, salon-originating fire.

The vessel was "catastrophic[ally]" damaged, leaving scant physical evidence from the upper two decks. (25-ER-5886) After testing recoverable items and items believed to be under the stairway between the *Conception*'s main and upper deck (including a garbage can, freshwater rinse bin, life ring, and buckets), Butta designed two stages of experimental test fires contemplating a fire starting either in the salon or a garbage can outside the salon. (24-ER-5505-11; 25-ER-5916, 5930) Crewmembers' descriptions led investigators to focus on these areas (*id.*), reflected in pre-fire photographs:



(24-ER-5599)

Those descriptions provided “benchmarks” that testing sought to replicate, including: Kohls’ statement that, while standing above the stairway, he saw the bottom of the stairway and the third starboard-side bathroom on fire (24-ER-5586-89); Molitor’s and French’s statements they observed flames coming over the upper deck’s rails and up the stairway (24-ER-5586, 5588); Kohls’ statement that, after he dropped to the main deck, he saw the salon, the stairway to the upper deck, and third bathroom on fire, floor-to-ceiling, and couldn’t enter the salon (24-ER-5586-89); and Molitor’s and French’s statements that flames rendered the port-side walkway between the bow and salon entrance impassable (24-ER-5586, 5589).

In the first, “intermediate-scale” tests, the ATF constructed a staircase like the *Conception*’s and placed it over the items they believed were underneath it, including a garbage can filled with paper towels. Despite the *Conception*’s highly-combustible walls, they attached the staircase to a “non-combustible” wall.⁶ (24-ER-5571) They used a lighter to ignite the paper towels. Each test changed certain conditions: 100 or 200 paper towels; two or four buckets next to the garbage can;

⁶ Though the NTSB concluded the “combustible nature of the vessel’s fiberglass-over-plywood construction” contributed to its upper decks’ “near total destruction” (24-ER-5509; *see* National Transportation Safety Board, Marine Accident Report (Oct. 20, 2020), <https://perma.cc/8PVR-BKX8> (“NTSB Report”))), the intermediate-scale models didn’t include fiberglass and the full-scale models discussed below only included portions covered by fiberglass similar—but not identical—to the *Conception*’s. (24-ER-5570-73, 5580-81)

the buckets' up-or-down orientation; the garbage can and rinse bin's distance from the wall; and, placing a floor fan in front of the garbage can and changing its settings, based on Kohls' statement that there was a stern-to-bow (back-to-front) breeze during the incident. (24-ER-5571-72, 5584)⁷ A camera atop the stairway simulated Kohls' perspective. (24-ER-5572)

Only two of 20 experiments—both utilizing the fan—led to flames at the bottom of the staircase. (25-ER-5927; *see* 25-ER-5916-30) Only seven tests led to flames extending out of the stairway opening (24-ER-5576-77), and in one (test #2), if not two (test #14, 35:20), of those seven tests the fire took longer than the 36 minutes (conservatively) between when Kohls went to bed and when he observed fire down the stairway. (*Id.*; 25-ER-5958 (Kohls took two-to-three minutes to reach main deck, before mayday call placed at the 39th minute)) Six tests utilized the fan, and in only two did flames appear in the stair/wall corner, as Kohls described, never extending into the stairway opening, as Molitor and French recalled. (24-ER-5509, 5585)

Although none of these tests fully reproduced the conditions described by the crewmembers, Butta and Hill concluded that a garbage-can fire could've spread as crewmembers recounted. (24-ER-5594; 25-ER-5930) Butta identified

⁷ Investigators also had statements indicating a lack of wind or current. (10-ER-2090, 2125; 27-ER-6537)

several important factors: the ignition of a life ring on the adjacent wall correlated with fire appearing at the base of the stairway (24-ER-5582); the farther the items from the wall, the less likely the life ring would ignite (*id.*)⁸; pointing the fan at the garbage can to simulate wind during some tests didn't "effect" the fire's propensity to ignite the life ring, but did impact the fire's "appear[ance][,]" because flames didn't appear at the bottom of the stairway absent the fan. (24-ER-5584-85) Hill also identified "the direction the garbage container fell" as critical to sustained burning, and concluded, without further analysis, that the container must have "in fact fall[en] towards the 5-gallon buckets and life ring" to ignite the wall. (25-ER-5929) Attempting to explain the lack of flames extending out the staircase's bottom step in most tests, Hill suggested Kohls "could be mistaken[,]" despite his utilizing Kohls' observations as a crucial benchmark. (25-ER-5919)

In the second, "full-scale" tests, the ATF built a replica of the salon, including the staircase and items underneath, and conducted five test fires, purporting to account for variables including the fire's origin, the location of exterior fiberglass, and airflow. (24-ER-5573) Certain scenarios were tested: inside

⁸ Inexplicably, the ATF positioned items "most similar" to their locations in the wreckage in only half the intermediate-scale tests, and, in those locations, flames extended into the stairway only 20% of the time. (24-ER-5583-85; *see* 25-ER-5919) The items weren't believed to have moved during the accident, having melted onto the main deck in a location consistent with pre-fire photographs. (25-ER-5909)

the salon in a booth in the port-side aft corner (Test 1); inside the salon in a booth in the starboard-side aft corner (Tests 2-3); and on the salon's exterior in the garbage can, as described above, with (Test 5) and without (Test 4) a fan pointing at it. (24-ER-5585) Butta recorded if and when he observed the above-described "benchmarks" (24-ER-5589)—an exercise he deemed "inherent[ly] subjectiv[e][.]" (24-ER-5576)

Tests 1 and 3⁹ involved igniting two adjoining backrests at the salon's respective back corners, where a photograph showed electronics charging during the accident trip. (25-ER-5932-33, 5938-39) Both produced smoke and/or fire in the stairwell areas after three-to-four minutes, such that it would've been impossible for Kohls to look down and see the bottom rungs on fire. (25-ER-5933-34, 5939-41) Test 1 produced fire out the aft port-side window, which Hill deemed inconsistent with Kohls' description of crossing the port-side walkway, even though Molitor and French described the area as impassable with flames and smoke. (25-ER-5933-34, 5955-56) Though the ATF didn't install windows at the mock-salon's forward-end, it placed cameras there to simulate French and Molitor's perspective when they looked through *Conception*'s windows and saw the salon obscured by smoke. (24-ER-5503; 25-ER-5935) In both tests, smoke

⁹ Test 2 didn't ignite.

completely obscured the view from the would-be galley window. (25-ER-5935, 5940-41) At 4:45 (Test 1) and 6:00 (Test 3), the fires were extinguished; the staircase and third bathroom sustained no damage, contrary to French and Kohls' descriptions of a floor-to-ceiling fire there. (25-ER-5936, 5942)¹⁰

Test 4 simulated an exterior-garbage-can fire without a fan, but the fire wasn't visible on the bottom steps until 50 minutes, and smoke didn't obscure the galley window until 52:35. (25-ER-5944-45) Hill claimed this progression tracked Kohls' movements, but didn't address that it substantially exceeded the witnesses' 39-minute timeline. (25-ER-5957-59) Additionally, although the crew had described the starboard side as impassable, Test 4 didn't have that result. (25-ER-5959) To explain this inconsistency, Hill speculated that the crew may have observed "fire extension out of the salon windows or...fire burning along the [starboard-side] soffit [(*i.e.*, overhang)]" (*id.*), thereby giving the false "impression" that the walkway was impassable. (25-ER-5964)

Test 5 mirrored Test 4 but added a fan. (25-ER-5949) At 10:40, fire appeared at the bottom of the staircase, before extending into the salon entrance seconds later. (25-ER-5951) Smoke obscured the salon at the 12-minute mark, before fire covered the salon's exterior after 14 minutes. (25-ER-5952-54) The fire

¹⁰ As noted, French didn't observe the salon's rear until later reboarding at the back of the boat.

was extinguished after 15 minutes. (25-ER-5954) This was the only full-scale garbage-can test within the 39-minute timeline. (24-ER-5578-79; 25-ER-5959-62)

From these results, the ATF concluded that a garbage-can fire could've spread to the adjacent fuel package items and wall. (24-ER-5594; 25-ER-5972) However, a salon-originating fire wouldn't have ignited the combustibles under the main-deck stairway without also making it impossible for witnesses at the top of the stairway to observe flames below, as they claimed. (24-ER-5594; 25-ER-5936, 5941-42) Butta tried to reinforce this conclusion by noting that 14 of 22 garbage-can tests resulted in fire at the bottom of the stairway, with a range of 07:50-52:38 in elapsed time, or an average of 26:35. (24-ER-5594) However, Butta declined to account for his intentionally altering variables away from the known facts in his tests, including, for instance, that only half of the intermediate-scale tests used a distance between the garbage can and wall consistent with their actual placement.

Boylan moved to exclude the fire-origin testimony, or hold a *Daubert*¹¹ hearing, arguing it unreliably applied scientific methods to the facts, and was therefore inadmissible. (24-ER-5496, 5533-48 (citing Fed. R. Evid. 401, 403, 702-703)) First, the experts ignored that the “garbage can test fires, including the only full-scale test without a fan,” well-exceeded the fire’s timeline. (24-ER-5533)

¹¹ *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

Second, the experts “mischaracterize[d] the facts on which they chose to rely and speculate[d] about others to fit a garbage can theory” by misstating the crewmembers’ descriptions of the fire, speculating that crewmembers were mistaken when their descriptions didn’t match the test fires, and counting intermediate-scale tests in which the garbage can and wash bin were placed differently than during the fire because that counterfactual placement generated faster fires. (24-ER-5533-48) Additionally, because the tests were “simulations” not “substantially similar” to the *Conception*’s circumstances, the tests and resulting opinions were inadmissible. (24-ER-5549-5558 (simulations contravened objective timeline, failed to account for weather conditions, the *Conception*’s construction, onboard electronics and batteries, accurate measurements, and garbage can’s actual contents))¹²

The government argued the opinions were reliable because they resulted from “extensive testing” and the “minor” flaws Boylan identified didn’t undermine

¹² The NTSB’s independent investigation concluded the fire likely originated inside the salon’s aft portion, explaining that because ““fire tends to spread vertically at a much greater rate than it does horizontally[,]” one would’ve expected the stairs above the trash can and upper deck to have caught fire before the salon’s interior during a trash-can fire, but that was inconsistent with the crewmembers’ descriptions. (24-ER-5524-26) The accident’s cause was a combination of TA’s ineffective oversight, insufficient regulatory requirements for smoke detection in all accommodation spaces, and that both bunkroom exits led to the same engulfed compartment, “thereby preventing escape.” (NTSB Report at 75)

its reliability (17-ER-3691, 3695-4000), or render the “simulations” not “substantially similar[.]” (17-ER-3700-03) Boylan replied that the government hadn’t “meaningfully address[ed]” his reliability arguments (17-ER-3582), including that the opinions resulted from inconsistent logic, confirmation bias, and testing that materially conflicted with the fire’s timeline. (17-ER-3582-91)

The court denied Boylan’s motion, concluding, without elaboration, that the ATF “provide[d] a reliable-based [fire-origin] opinion” (17-ER-3518; *see* 1-ER-12-13), and that Boylan’s concerns were for cross-examination. (17-ER-3539-43)

2. Pretrial litigation regarding Captain Tortora’s opinions

Perhaps recognizing that the infirm testing underlying the origin opinions couldn’t adequately *show* Boylan’s conduct caused death, the government noticed Captain Sean Tortora to *tell* the jury, among other things, there was causation. Tortora held an unlimited tonnage license, with experience in commercial towing, cargo transportation, and firefighting in those contexts. (2-ER-307-08, 327-39) His master’s degree was in International Transportation Management and his experience at sea predominantly involved extremely large vessels and directing 250-person crews, including 23 years in the U.S. Navy working in replenishment and on military transport ships. (2-ER-308) Based on this training and experience, Tortora proposed to opine, among other things, that fire is ““the most dangerous event...to a mariner”” (2-ER-309), and that ““marine casualties are often the result

of vessel crew not adequately addressing what start as small, containable incidents”” (*id.*). (2-ER-339)

Boylan sought, pretrial, to exclude Tortora’s testimony or hold a *Daubert* hearing (2-ER-298), arguing Tortora’s inexperience with small boats like the *Conception* made his opinions about Boylan’s conduct unqualified and irrelevant. (2-ER-311-14) Tortora’s quantitative assertions regarding marine casualties and fires were unreliable because they were unsupported by the government’s disclosures, and “in direct conflict” with the NTSB’s statistical analysis in response to this incident, which examined over 10,000 incidents and found the amount of fires to be nominal. (2-ER-315-16)

The government argued Tortora’s experience on large vessels made him “overqualified” to discuss practices on small vessels. (2-ER-285-86) It also claimed, without citing data contrary to the NTSB’s analysis, that Tortora’s training and “academic” experience supported his quantitative opinions. (2-ER-290-92) It supplemented its disclosure to include opinions, based also on the ATF’s and NTSB’s reports, that: captains “must conduct themselves with prudent seamanship[,]” by ensuring crewmembers have “formal fire training” and complete firefighting drills, “observing all applicable rules and regulations at all times[,]” “ensur[ing]” a “roving patrol[,]” and otherwise adequately responding to a fire; Boylan’s emergency training and drilling of crewmembers was inadequate under

relevant regulations; and, had Boylan acted differently, including by implementing a roving watch, the decedents would've survived. (2-ER-271-74)

Boylan replied that Tortora's experience was inadequately detailed to justify his qualifications or his opinions' reliability. (2-ER-249-56; *see* 2-ER-223-29) His quantitative conclusions were particularly unsupported because his supplemental disclosure *favorably* cited to the contradictory NTSB report. (2-ER-257-58) Tortora's opining on Boylan's violating regulations—and that adherence could've prevented the deaths—were improper ultimate legal conclusions, risking a negligence-per-se conviction,¹³ and vouching for and expanding upon the ATF's origin opinions. (2-ER-228, 258-61, 321). Furthermore, Tortora's mismatched experience rendered his opinions about "prudent seaman[ship]" unqualified, unreliable, and irrelevant. (2-ER-254, 260)

The court concluded that Boylan "ha[d]n't shown" Tortora was unqualified, dismissing Boylan's reliability concerns as for cross-examination. (1-ER-26-29; *see* 3-ER-374-75)

¹³ "[P]er se liability is founded upon violation of a...safety regulation, which raises a rebuttable presumption of negligence[.]" *Dyer v. United States*, 832 F.2d 1062, 1065 (9th Cir. 1987).

3. The ATF experts testify at trial to the fire's origin, despite conceding that the direction of any wind was opposite the fan in their simulations.

Butta and Hill testified¹⁴ that, based on their experiments, a salon-originating fire was inconsistent with Kohls' observations because it wouldn't have resulted in a fire observable near the bottom of the stairs. (10-ER-1991-92, 2070-71, 2149-50) However, fire could've originated in the below-staircase garbage can and spread into the salon, regardless of airflow, and would've been easier to extinguish. (10-ER-1992, 2063-64, 2071-72)

Butta acknowledged that the 50-minute full-scale garbage-can test without airflow (Test 4) significantly exceeded the 39-minute timeline established by the witnesses. (10-ER-1993, 2000-04) Butta added stern-to-bow airflow (Test 5) after Hill emailed him that request, stating that wind was a "sticking point" because the Weather Service indicated a bow-to-stern breeze, while Kohls recalled a stern-to-bow breeze. (10-ER-2013-14, 2028-29, 2089, 2122-24) Importantly, however, Hill agreed that a front-anchored vessel like the *Conception* typically orients into the wind, meaning the wind would be blowing bow-to-stern, or the *opposite direction*

¹⁴ Before their testimony, Boylan renewed his *Daubert* objections, arguing the testimony lacked foundation because the government's trial witnesses had uniformly testified that there was no wind during the fire. (1-ER-34-36; *see* 7-ER-1335, 1348, 1363-64; 10-ER-2090; 13-ER-2801, 2825-26; 16-ER-3348) The court overruled the objection, stating the matter was for cross-examination. (1-ER-34, 38)

of the airflow on which his results were premised. (10-ER-2125-26) Moreover, and despite airflow's necessity to their garbage-can theory, *none* of the ATF testing of salon-originating fires included airflow.¹⁵ (10-ER-2028, 2087)

Butta acknowledged testing a variable number of dry paper towels, despite not knowing their quantity or moisture content during the incident. (10-ER-2008-09) Because the fiberglass lining the vessel's walls burned with one of "the lowest heat fluxes [Butta] ha[d]...witnessed[,]"¹⁶ it played a "big role" in the fire's spread. (10-ER-1979-80, 2007) However, Butta attached the staircase to a noncombustible—*i.e.*, non-fiberglass—wall because doing otherwise exceeded his testing's scope. (10-ER-2006-07)

4. Tortora testifies that Boylan's negligence caused the deaths based on the ATF's simulations, despite being concededly unqualified to address causation, and unable to recall those simulations.

Tortora was qualified as an expert in "prudent seamanship and ... marine fire prevention, firefighting, and fire safety" based on his teaching marine firefighting and knowledge of regulations applicable to the *Conception*. (11-ER-2227; *see* 11-ER-2210-2227)

¹⁵ The salon's rear/side doors and windows were open during the fire. (*See, e.g.*, 7-ER-1443)

¹⁶ "Heat flux gauge[s] measure[] heat applied to a surface"; the lower the heat flux, the easier to ignite a substance. (24-ER-5538; *see* 24-ER-5580-81)

Tortora testified, *inter alia*, that fire is the “most dangerous event” at sea (11-ER-2228); insufficient training is the “biggest cause” of marine casualties (*id.*); and applicable regulations require captains to implement nighttime roving patrols and conduct fire trainings and weekly drills (11-ER-2228-30, 2233, 2246-48, 2251-57, 2264). Based predominantly on the ATF’s experiments, Boylan didn’t perform those duties, as prudent seamanship requires (11-ER-2217-18, 2256-57, 2261-65), and this “[mis]conduct”—specifically, his not following “appl[icable]” “regulations”—“le[]d to the [34] deaths[.]” (11-ER-2276-79, 2382-84)¹⁷ A roving patrol’s absence, Tortora elaborated, was “the” essential “link” in the causation chain. (11-ER-2278-79 (“[P]ut a roving patrol in....We’re not sitting here today.”))

Boylan attempted to cross-examine Tortora regarding his causation opinions. Contradicting its written position that Tortora’s “expertise” and familiarity with the ATF’s “analyses” qualified him to “opine that the victims...would have survived had [Boylan] fulfilled his obligations” (2-ER-160-61), the government repeatedly objected that Tortora was *unqualified* to testify regarding causation, rendering Boylan’s inquiries “beyond the scope of [Tortora’s] expert testimony. It’s 403[.]” (1-ER-57; *see* 1-ER-45-49) Boylan countered this cross-examination was “critical”

¹⁷ Boylan later argued that Tortora’s opining on the ultimate legal issue of causation required a mistrial. (1-ER-39-42) The court disagreed because Tortora was “qualified” to opine on causation, the issue was “just common sense” (1-ER-39), and Tortora hadn’t used explicit legal terminology (1-ER-43-44).

because Tortora's error-in-the-chain opinion "relied on" the ATF's modeling. (1-ER-44, 52, 55) The court allowed Boylan to play the ATF's experiment videos for Tortora, but Tortora couldn't recall them. (1-ER-57-61) The court thus precluded Boylan from cross-examining Tortora on the testing that undergirded his opinions. (1-ER-55)

D. The Jury Is Instructed That Mere "Misconduct" Can Satisfy Seaman's Manslaughter's Actus-Reus Requirement.

The parties disputed jury instructions regarding the required acts for seaman's manslaughter. The government proposed instructing that Boylan "acted with a wanton or reckless disregard for human life by engaging in misconduct, gross negligence, or inattention to his duties" as a required element. (2-ER-181) It also proposed quoting six civil Coast Guard regulations admitted at trial. (2-ER-208-11; *see* 16-ER-3343-47); *see* 46 C.F.R. § 185.900 (civil penalty for violation); 46 U.S.C. § 8906 (same).

Boylan argued that including "misconduct" as a violative act allowed conviction based on a standard below "gross negligence[,"] which the court had previously held was a required element.¹⁸ (2-ER-182-87, 204 (citing *United States*

¹⁸ The district court dismissed a previous indictment for failing to allege gross negligence. *United States v. Boylan*, No. 20-CR-600-GW, 2022 WL 6338421 (C.D. Cal. Aug. 30, 2022). The government initially appealed that order, but later abandoned its appeal and reindicted Boylan alleging gross negligence. *See* Order (Dkt. 5), *United States v. Boylan*, No. 22-50198.

v. Garcia, 729 F.3d 1171, 1175-77 (9th Cir. 2013)); 1-ER-62-64). Further, including the regulations in the jury instructions prejudicially elevated those regulations over other evidence, and risked “undermin[ing] [any] limiting instruction” about the regulations’ role and a possible negligence-per-se conviction. (1-ER-68-74; 2-ER-211-13)

The government also proposed a limiting instruction that the jury “need not find [Boylan] guilty simply because” of violating a regulation (2-ER-144, 215), while Boylan proposed to instruct—contemporaneously to the regulations’ introduction and at the trial’s conclusion—that the regulations weren’t “criminal laws” and any violation wasn’t “proof that [Boylan] acted with gross negligence or [was] otherwise guilty[.]” (2-ER-144, 219-20)

The court overruled Boylan’s objections, instructing that the government had to prove that Boylan “engaged in misconduct and/or acted with gross negligence which means acting with wanton or reckless disregard for human life[.]” (2-ER-138) The court didn’t define “misconduct[,]” but after stating the elements, explained: “[t]he Secretary of the Department of Homeland Security...has issued regulations some of which set forth standards of care...to protect against hazards that endanger vessels” and passengers. The court then listed seven regulations, largely tracking those charged in the indictment, and their exhibit numbers. (2-ER-138-39) It then explained:

“In deciding whether Defendant violated 18 U.S.C. § 1115, you may consider whether Defendant failed to comply with one or more of those regulations and, if so, whether that (or those) failure(s) provide evidence as to one or more of the elements of the Section 1115 crime - for example whether Defendant knew of the risk to human life or knew of facts which, if considered and weighed in a reasonable manner, indicate a substantial and unjustifiable risk to human life. The mere fact that the Defendant violated a regulation is not by itself sufficient to establish a violation of 18 U.S.C. § 1115. Rather, you must consider all of the relevant evidence regarding the existence or non-existence of gross negligence and the other elements of Section 1115. In evaluating the significance of a violation of a regulation by the Defendant (if you first find such violation by Defendant), you may consider: (1) whether the requirements in the regulation were specifically directed to persons in Defendant's position, (2) whether the requirements of the regulation were adequately set out, (3) whether the obligations under the regulation are mandatory or simply advisory, (4) if applicable, the degree or seriousness of the violation, (5) whether the regulation was enacted to protect the safety of passengers on board vessels, (6) the seriousness of the harm(s) that the regulation was designed to prevent, and (7) whether the kind of harm(s) (that the regulation was enacted to prevent) actually occurred as a result of the Defendant' s failure to comply with the regulation.”

(2-ER-139)

Boylan objected to the multi-factor test for considering the regulations (which neither party requested) as overemphasizing any regulatory violation over the totality of evidence. (1-ER-74-75)

E. “But-For” Causation Is Never Alleged or Included in the Jury Instructions.

Boylan also proposed language requiring the jury to find that his conduct was both the proximate and actual, or “but-for[,]” cause of death. (2-ER-196) Boylan objected to the government’s instructions’ failure to include but-for

causation. (2-ER-191-92, 205-206) The government contested whether section 1115 required but-for causation, elaborating that if the “defense’s position is that the government must allege and prove that defendant’s actions ‘actually caused’ the 34 deaths, that argument should have been made in a motion to dismiss the indictment because the government did not allege nor can it prove ‘actual cause’ in this case.” (2-ER-197; *see* 2-ER-145-55)

Citing this concession, Boylan moved to dismiss. (2-ER-162-73) Before trial, the court denied Boylan’s motion, stating it would use this Court’s model manslaughter instruction, which doesn’t include a “but-for” causation element. (1-ER-14-25, 66-67) The court then instructed only that misconduct and/or gross negligence must “proximate[ly] cause” death. It defined “proximate cause” as “one that played a substantial part in bringing about the death, so that the death was the direct result or a reasonably probable consequence of the Defendant’s misconduct and/or gross negligence[.]” (2-ER-138)

VI. SUMMARY OF ARGUMENT

Four grounds support reversal of Boylan’s conviction:

(A)(1). The jury instructions prejudicially diminished 18 U.S.C. § 1115’s requirements for a culpable act or omission. The district court’s prior decision that “gross negligence” was statutorily required was not only the law of the case, but correctly recognized that more than ordinary negligence is required for negligent

homicide offenses. Nevertheless, the court instructed that Boylan could be convicted for mere “misconduct,” opening the door to a conviction for not just less than grossly negligent acts, but the violation of several civil regulations incorporated into the instructions and expressly associated with the “standard of care[.]” The court’s self-authored seven-part test for weighing the regulations further elevated their importance and heightened the risk of an erroneous conviction.

(A)(2). Section 1115’s text, as reinforced by foundational common-law principles, requires that Boylan’s conduct be both the actual (*i.e.*, “but-for”) *and* legal (*i.e.*, proximate) cause of death. *See Burrage*, 571 U.S. at 210. But the indictment and jury instructions incorporated no notion of actual causation. Because an indictment that omits an essential element must be dismissed irrespective of prejudice, or because the jury instruction error wasn’t harmless beyond a reasonable doubt, this Court should reverse.

(B). Reversal is warranted because the court erroneously admitted the testimony of three expert witnesses without performing its required gatekeeping duty under Federal Rule of Evidence 702. Hill and Butta’s fire-origin opinions were unreliable because they were based on testing that either distorted, or was squarely inconsistent with, the relevant facts, and was otherwise not substantially similar to conditions during the accident. Tortora then prejudicially relied on the

erroneously admitted origin testimony to attest to ultimate legal conclusions that Boylan’s “[mis]conduct” was “the” critical “link” in the chain that led to the deaths. After the court sustained the government’s objection that Tortora was *unqualified* to opine on causation, Boylan was left unable to cross-examine Tortora on this vital conclusion. The unqualified, unreliable, and unfairly prejudicial nature of Tortora’s opinions on quantitative matters and what constitutes “prudent seamanship” only compounded the harms to Boylan—harms the gatekeeping function is designed to check. Because the court abdicated those duties, and the testimony meaningfully transgressed relevant evidentiary rules, this Court should reverse.

(C). The errors’ cumulative effect also warrants reversal.

VII. STANDARDS OF REVIEW

De novo review applies to pretrial challenges to the sufficiency of an indictment, *United States v. Qazi*, 975 F.3d 989, 992 (9th Cir. 2020), and jury instructions that inadequately define an offense, *United States v. Singh*, 979 F.3d 697, 711-12 (9th Cir. 2020). Abuse-of-discretion review applies to the admission of expert testimony. *United States v. Holguin*, 51 F.4th 841, 852 (9th Cir. 2022).

VIII. ARGUMENT

A. Several Charging Errors Warrant Reversal.

18 U.S.C. § 1115 punishes “[e]very captain, engineer, pilot, or other person employed on any steamboat or vessel, by whose misconduct, negligence, or inattention to his duties on such vessel the life of any person is destroyed” with up to 10 years’ imprisonment. By these terms, a felony conviction isn’t permitted on mere proof of a regulatory violation which makes death reasonably probable; instead, the statute imports requirements of gross negligence and actual (specifically, “but-for”) causation that typify manslaughter-type offenses. But the district court permitted the repeated dilution of these requirements, first in the indictment (for causation) and then later in the jury instructions (for causation and negligence), resulting in several reversible errors.

1. Actus reus

Jury instructions “must correctly state the law[,]” *Dang v. Cross*, 422 F.3d 800, 805 (9th Cir. 2005), and be “unmistakably clear[.]” *United States v. Patel*, 762 F.2d 784, 790 (9th Cir. 1985). Using model instructions or exact statutory language doesn’t preclude error. *See, e.g., United States v. Main*, 113 F.3d 1046, 1047, 1050 (9th Cir. 1997) (recognizing implied proximate-causation requirement in 18 U.S.C. § 1112, not in model instructions). Here, the district court initially—and correctly—recognized that “gross negligence” was required to convict Boylan of

seaman's manslaughter. But its actus-reus instructions erroneously allowed—and encouraged—conviction for mere “misconduct” or violation of civil regulations—a significantly diminished standard.

a. The instructions erroneously permitted conviction based on undefined “misconduct[,]” or violation of Coast Guard regulations.

The instruction that the actus-reus requirement could be satisfied by “misconduct and/or gross negligence” erroneously permitted conviction based on less than gross negligence and on a mere finding of a regulatory violation. Because the parties agreed that the regulations, though admissible, were “not the exclusive source informing [Boylan’s] duty of care” (17-ER-3636), each introduced evidence of pre-accident industry standards. But the instructions ultimately imposed on the jury the court’s mistaken belief that only “the regulations...set forth...the standard of care” (10-ER-2118; *see* 11-ER-2271 (violating regulation “by definition, is negligence”)) and that Boylan’s industry-standard evidence couldn’t “in any way trump the regulations[.]” (11-ER-2393) This language backtracked from the court’s prior rulings and improperly nullified Boylan’s defense on this element.

To begin, including “misconduct” with the disjunctive “or” wrongly reversed the court’s holding that gross negligence is “require[d]” under section 1115. *Boylan*, 2022 WL 6338421, *8; *see Garcia*, 729 F.3d at 1176 (instruction permitting conviction of involuntary manslaughter based on an “unlawful act” *or* a

“lawful act” with gross negligence failed to require gross negligence). The court dismissed the first indictment for failing to allege gross negligence, a decision that the government could have appealed but chose not to. *Supra* n.18. That rendered a gross-negligence requirement the “law of the case[,]” and the court shouldn’t have revisited it. *See, e.g., United States v. Alexander*, 106 F.3d 874, 875-78 (9th Cir. 1997); *United States v. One 1987 Mercedes Benz Roadster 560 SEC, VIN WDBBA48D3HA064462*, 2 F.3d 241, 243 (7th Cir. 1993).

And that initial ruling—in a lengthy, well-reasoned decision—was substantively correct. This Court’s precedents requiring “gross negligence” for negligent homicide liability logically extend to seaman’s manslaughter—a homicide statute codified in the homicide chapter of the federal code. 2022 WL 6338421, at *5-*8 (citing, *inter alia*, *United States v. Keith*, 605 F.2d 462, 463 (9th Cir. 1979)); *see United States v. Gomez-Leon*, 545 F.3d 777, 791-95 (9th Cir. 2008) (surveying analogous statutes). Although the term “misconduct” appears in section 1115, “statutory language cannot be used in an instruction if that language” effectuates a “less onerous standard” for a “required element[.]” *Garcia*, 729 F.3d at 1177 (cleaned up) (instructions’ use of “in an unlawful manner” language from involuntary-manslaughter statute improperly undermined “gross negligence” requirement under common-law rule). Nonetheless, the court acquiesced and

erroneously included “misconduct” as a way to satisfy the actus reus requirement separately from “gross negligence.”

Worse, the term “misconduct,” without definition, was “significantly overinclusive[,]” raising the specter of convicting Boylan for “‘lawful conduct.’” *McDonnell v. United States*, 579 U.S. 550, 577 (2016). For one, the court’s vague phrasing allowed the actus-reus requirement to be satisfied by Boylan’s failure to adhere to civil regulations. Time and again, this Court has held that “it is impermissible to use the violation of a civil [regulation] to ipso facto ‘supply a crucial element’ of a[n]...offense.” *United States v. White Eagle*, 721 F.3d 1108, 1114 (9th Cir. 2013) (collecting cases).

The instructions here encouraged such misuse. Rather than articulating *what* “misconduct” *might* satisfy the actus-reus requirement, the court instructed that several regulations Boylan was charged with violating *did* “set forth” the “standard of care” and could “provide evidence” of an “element[.]” (2-ER-139) Its advisement that the regulations weren’t alone “sufficient to establish a violation of 18 U.S.C. § 1115” only reinforced that, while the jury couldn’t singularly use the regulations to convict Boylan of a *crime*, it could, as the preceding language urged, use a regulatory violation to satisfy an “element” such as (undefined) “misconduct[,]” the “standard of care[,]” or even “gross negligence.” (See 2-ER-219-20; compare 2-ER-144 (Boylan’s correctly proposing instruction that

regulatory violation wasn't "alone...proof...[of] gross negligence").

"Misconduct" is conventionally defined as "[a] dereliction of duty; unlawful or improper behavior.'" *In re Texas Pig Stands, Inc.*, 610 F.3d 937, 944 n.8 (5th Cir. 2010) (quoting Misconduct, *Black's Law Dictionary*).

Considered holistically—and regardless of whether section 1115 requires gross or ordinary negligence, or something else—the instructional language pointed the jury to the regulations as the main evidence of "misconduct" (*i.e.*, "unlawful...behavior") and intolerably permitted liability based a "far less onerous" standard than section 1115 requires. *United States v. Shortman*, 91 F.3d 80, 82 (9th Cir. 1996); *see United States v. Pardee*, 368 F.2d 368, 373-75 (4th Cir. 1966) (instruction implying that regulatory violation established "unlawful act" sufficient for involuntary manslaughter was erroneous, given required gross-negligence standard).

b. Instructing the jury on the content of Coast Guard regulations, and applying a multi-factor test of unknown provenance for considering their "significance[,]" improperly elevated the regulations' importance and heightened the risk of their improper use.

The court separately erred by reading a long list of regulations which, it advised, "set forth [applicable] standards of care[,]" and then a self-penned seven-factor test for assessing their "significance." (2-ER-138-39) By overemphasizing

the regulations, these instructions rendered a negligence-per-se finding all-the-more probable, and independently warrant reversal.

If courts admit civil regulations at trial, they must take “painsstaking care” to avoid a conviction for violating them. *United States v. Borders*, 829 F.3d 558, 565-66 (8th Cir. 2016). Including regulations in jury instructions is generally impermissible because it “improperly focus[es] the jury’s attention” on the regulations, *United States v. Christo*, 614 F.2d 486, 492 (5th Cir. 1980), and “create[s] a serious risk” of misusing the regulations to “supply a crucial element[.]” *United States v. Wolf*, 820 F.2d 1499, 1505 (9th Cir. 1987).

Here, the court violated these principles by including seven regulations in its instructions. The prejudice from reading this list was then exacerbated by the court’s seven-factor test, which, by its terms, presupposed the regulations’ “significance[,]” leaving open only *how much* “significance” the jury would ascribe. Despite this Court’s warnings to avoid this perilous path, *see, e.g., Green v. City of Tucson*, 255 F.3d 1086, 1089 (9th Cir. 2001) (en banc) (multi-factor tests “are prone to ‘mechanical application that overlooks or underemphasizes’” legal requirements), the court devised a test without any apparent legal pedigree, and at no party’s request. Most factors weighed against Boylan, thus strongly implying the regulations should be afforded significant (adverse) weight, instead of among the totality of evidence. (1-ER-74-75)

These circumstances heightened the danger of a “misconduct” finding based solely on regulatory violations.

c. The errors weren’t harmless.

The government cannot show these errors were harmless beyond a reasonable doubt. *Garcia*, 729 F.3d at 1177-78. A negligence-per-se theory, like the court endorsed here, effectuates a powerful “presumption of negligence[,]” shifting the burden to the defendant to demonstrate he wasn’t negligent. *Dyer*, 832 F.2d at 1065. Boylan presented evidence that he acted prudently under then-industry standards as a counterweight to the regulations. *See supra* Part V.B. But that evidence was sapped of its potency by the government’s elevating the regulations through prolonged—and erroneous (*see infra* Part VIII.B.3)—expert testimony on their importance (11-ER-2217-18, 2227, 2246-57), that noncompliance was imprudent (11-ER-2241, 2255), and, finally, prejudicially diagnosing this precise “[mis]conduct”—specifically referencing the absence of a roving patrol and regulatory violations—as the cause of death. (11-ER-2276-79); *see United States v. Farinella*, 558 F.3d 695, 700 (7th Cir. 2009) (expert’s legal conclusions exacerbated civil regulations’ misuse).

The government then referenced the regulations 14 discrete times in closing (14-ER-3139-43, 3146, 3150-52, 3157, 3160, 3163-65, 3167), nine times in rebuttal (14-ER-3214-16, 3119-20, 3223, 3227), and foregrounded and quoted

them in its accompanying PowerPoint presentation. (16-ER-3358, 3375) It reinforced the errors by repeatedly equating Boylan's not following obligations imposed "by law" or not "knowing the law" with "gross negligence" (14-ER-3139-41, 3223) and emphasized the regulations' "[n]umber one" and "central...role" in proving "misconduct and/or gross negligence" (14-ER-3163, 3216).¹⁹

The court's instructions ratified these erroneous arguments, and its novel multi-factor test guaranteed the jury prioritized the regulations at the expense of Boylan's defense. *See Wolf*, 820 F.2d at 1505 (limiting instruction regarding overemphasized regulations "could not repair the damage" from their improper use); *see also United States v. Riddle*, 103 F.3d 423, 434 (5th Cir. 1997) (using regulations in such a "large and unchecked way that [their] permissible limited use was overwhelmed" required reversal). All three substantive jury notes directly referenced a regulatory "violation" or were construed accordingly. (2-ER-130-33; 15-ER-3283-3305) The court responded to the first note probing the scope of the failure-to-train/drill allegations by merely referring the jury to the regulations, over Boylan's strenuous objection that emphasizing the regulations while not

¹⁹ The government's opening similarly emphasized the regulations. (5-ER-870-72, 879)

reinstructing the jury on the negligence standard risked a negligence-per-se conviction. (15-ER-3285-86, 3304-05).²⁰

These circumstances call for reversal. *See Garcia*, 729 F.3d at 1177-78 (defective negligence instruction not harmless where court referenced the “confus[ed]” jury back to that instruction).

2. Causation

- a. **The indictment did not allege, and the jury wasn’t required to find, the required element of “but-for” causation.**

Section 1115 requires alleging and proving “but-for” causation. The court’s refusal to instruct the trial jury on “but-for” causation, or to dismiss the indictment for failing to allege “but-for” causation, was error.

Since its 1838 origins, section 1115’s causation language—punishing a captain “by whose” conduct “life...is destroyed”—has remained materially unaltered. *See United States v. Kaluza*, 780 F.3d 647, 664 (5th Cir. 2015) (summarizing history); *see By, Webster’s Dictionary 1828* (“by” connotes “cause”). Its history is sparse, but like every federal homicide statute, section 1115

²⁰ This wasn’t a one-off: the court repeatedly declined Boylan’s attempts to mitigate this prejudice. It didn’t provide a limiting instruction contemporaneous to the regulations’ admission that violating a regulation “alone is not proof that he acted with gross negligence[,]” as Boylan requested, citing this Court’s guidance favoring such instructions, to avoid a negligence-per-se conviction. (2-ER-219-20, 237-39).

derives its meaning from common-law principles. *See United States v. Serawop*, 410 F.3d 656, 662 (10th Cir. 2005).

Criminal law has “long” required both “actual” and “legal” (often “proximate”) cause. *Burrage*, 571 U.S. at 210. This is particularly true where, as here, the “crime requires ‘not merely conduct but also a specified result[.]’” *Id.* (quoting LaFave, Substantive Criminal Law, § 6.4(a)). Actual cause usually requires the conduct be a “but-for” cause of death. LaFave, *supra*; *see Burrage*, 571 U.S. at 214 (but-for causation is “traditional background principle[] against which Congress legislate[s]” (quotation omitted)). This was no less true in the mid-nineteenth century. *Comcast Corp. v. Nat'l Ass'n of African American-Owned Media*, 589 U.S. 327, 335 (2020). Thus, section 1115’s “[b]y whose” phrasing—like “by reason of,” “results from,” “based on,” or “because of”—presumptively connotes “but-for” causation. *See Burrage*, 571 U.S. at 213; *Univ. of Texas Sw. Med. Ctr. v. Nassar*, 570 U.S. 338, 347 (2013) (but-for causation is “default rule[] [Congress] is presumed to have incorporated, absent an indication to the contrary in the statute itself”).

Here, however, relying on this Court’s Model Instruction 16.4 (Manslaughter—Involuntary) and its references to *United States v. Main*, 113 F.3d 1046, 1049-50 (9th Cir. 1997), a pre-*Burrage* case, the district court only required jurors to find that Boylan’s alleged “misconduct and/or gross negligence” was the

“proximate cause” of death. The court defined “proximate cause” as “one that played a substantial part in bringing about the death, so that the death was the direct result or a reasonably probable consequence of the Defendant’s misconduct and/or gross negligence[.]” (2-ER-138) The language was drawn verbatim from *Main*’s definition of “proximate cause”: no notion of actual causation, much less “but-for” causation, was mentioned. *See United States v. Houston*, 406 F.3d 1121, 1123 n.4 (9th Cir. 2005) (“reasonably probable consequence” connotes foreseeability—a concept of proximate cause); *see also Ford Motor Co. v. Boomer*, 736 S.E.2d 724, 730 (Va. 2013) (similar, “substantial contributing factor”).²¹ Indeed, as the district court explained, but-for causation wasn’t “an issue” in *Main*,²² and whether section 1115 requires but-for causation remains a “significant” question for this Court’s resolution. (2-ER-82)

But the Supreme Court has left little doubt about the answer to that question: seaman’s manslaughter, like the *Burrage* statute, requires both conduct (a grossly negligent act) and a result (death), and so requires both actual (but-for) and legal

²¹ Even if *Main*’s “direct result” language connoted actual cause, *contra* 113 F.3d at 1049-50; *United States v. Pritchard*, 964 F.3d 513, 530 (6th Cir. 2020) (Clay, J., concurring) (collecting cases), the instructions’ use of the disjunctive didn’t require a “direct result.” *See Garcia*, 729 F.3d at 1176.

²² *Main* alluded, in dicta, to cause-in-fact being one of “two” “basic” requirements of causation in criminal cases, along with proximate causation. 113 F.3d at 1050.

causation. *See, e.g., United States v. Alvarez*, 601 F. App'x 16, 18 (2d Cir. 2015) (unpublished) (*Burrage*'s "interpretive logic" requires this analysis); *United States v. Miller*, 767 F.3d 585, 592 (6th Cir. 2014) (similar; holding 18 U.S.C. § 249 requires but-for causation). The doctrine applies equally to charges of causing death by omitting one's legal duties. *Delligatti v. United States*, 145 S. Ct. 797, 807 (2025). Indeed, at least one court within this Circuit has applied a "but-for" standard to involuntary-manslaughter charges post-*Burrage*. *See United States v. McAvay*, No. CR 19-00113 JAO, 2022 WL 1912673, at *13 (D. Haw. June 3, 2022).²³

This Court should therefore hold that the court's refusal to instruct the trial jury on this critical element, or to dismiss the indictment because, by the government's own admission, it didn't "'allege nor [could] it prove'" the required element of but-for causation, was reversible error. (2-ER-164)

b. If harmless-error review is required, the errors weren't harmless.

Harmless-error review isn't applicable to an inadequately charged indictment. *Qazi*, 975 F.3d at 992. Regardless, the government cannot demonstrate the deficiencies in the indictment and jury instructions were harmless.

²³ The government has proposed jury instructions in at least one seaman's manslaughter prosecution requiring but-for causation. *See United States v. Hutchinson*, No. 16-168-DBH, 2018 WL 11295042 (D. Me. Jul. 26, 2018).

Requiring only that death have been a “reasonably probable”—rather than necessary—result of Boylan’s conduct was extremely consequential. Where, as here, several passive forces combine to manifest a harm, proving causation is rigorous. *See, e.g., Bd. of Cnty. Comm’rs of Bryan Cnty., Okl. v. Brown*, 520 U.S. 397, 406-07 (1997) (liability premised upon omission, such as “inadequate training,” presents “more difficult problems of proof[,]” requiring “rigorous standards” for fault and causation). Actual and proximate causation overlap, but are distinct. *See United States v. Dominguez Benitez*, 542 U.S. 74, 83 n.9 (2004) (“reasonable-probability” and “but for” standards are “not the same”); *see also Paroline v. United States*, 572 U.S. 434, 449-50 (2014) (explaining how a harm can be a proximate, but not a “but for[,”] cause). Usually, “reasonably probable” causation is “less demanding” than “but for” causation. *Richards v. Cnty. of San Bernardino*, 39 F.4th 562, 573-74 (9th Cir. 2022). For a “constellation of events[,]” resolving proximate causation may be simple, while but-for causation complicated. *Aegis Ins. Servs., Inc. v. 7 World Trade Co., L.P.*, 737 F.3d 166, 179 (2d Cir. 2013) (discussing several forces contributing to September 11th damages).

The witnesses consistently described an astonishingly fast-moving fire that seemingly overwhelmed the vessel in a fraction of the 39 minutes representing the outermost timeframe for the fire. A fast-spreading salon-originating fire that immediately blocked both egresses available to the decedents was amply plausible,

particularly given the ATF simulations' shortcomings. *See infra* Part VIII.B.2. Such a scenario called into question whether the deaths could've been prevented by a roving patrol or other safety measure, particularly given the confluence of factors and the government's expert testimony that an *hourly* roving patrol was the industry standard. (11-ER-2381, 2420; *see* 10-ER-2071 (larger salon-originating fire harder to extinguish)) Recognizing these difficulties, the government admitted it couldn't prove actual causation (2-ER-197-200), and emphasized the actual-proximate distinction in closing. (14-ER-3171, 3176)

Requiring only causation to a "reasonabl[e] probab[ility]" unburdened the government of a standard it admittedly couldn't meet and allowed it to speculate, with defective expert testimony, about how various scenarios could've played out—without ever having to prove an actual causal link. *See infra* Part VIII.B. And even those arguments barely passed muster: the jury's final substantive note suggested its verdict hinged on causation.²⁴ Fundamentally, the government cannot show the weakened causation standard didn't tip the scales.

²⁴ Specifically, the jury asked whether the "lesser[-included] charge" of 46 U.S.C. § 2302(b)—which only differed from seaman's manslaughter by requiring endangering life (rather than causing death)—"include[d] the roving-patrol allegation[.]" (2-ER-130-31; *see* 2-ER-100-02)

B. Further Errors In Admitting Expert Testimony Warrant Reversal.

Reversal is independently warranted because the district court abused its discretion by admitting the opinions of government experts Hill, Butta, and Tortora regarding the contested issues of negligence and causation. The court failed to analyze that testimony's reliability and relevance as required by Federal Rule of Evidence 702. Rather than determining whether the government met its burden to show reliability and relevance, the court shifted the burden to Boylan and otherwise deemed Boylan's concerns solely for cross-examination. The court was wrong to do so, particularly as Boylan raised serious issues surrounding the opinions' reliability and relevance, as well as Tortora's lack of qualification and testimony about ultimate legal conclusions. Because the court's handling of Boylan's expert motions violated evidentiary rules, and the record suffices to determine the testimony unreliable, unqualified, and irrelevant, the Court should reverse the conviction or remand for a proper *Daubert* analysis. *United States v. Bacon*, 979 F.3d 766, 769-70 (9th Cir. 2020) (on finding *Daubert* error, appellate court can make findings if the record is sufficient, or remand for a proper analysis).

1. The court failed to perform its gatekeeping function.

"Under Rule 702, before admitting expert testimony, the district court must perform a gatekeeping role to ensure that the testimony is both relevant and reliable." *United States v. Valencia-Lopez*, 971 F.3d 891, 897-98 (9th Cir. 2020)

(cleaned up). The reliability inquiry is a “malleable one tied to the facts[,]” *Murray v. S. Route Mar. SA*, 870 F.3d 915, 922 (9th Cir. 2017), but, at its core, involves “a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.” *Daubert*, 509 U.S. at 592-93. Courts look to whether the expert is “testify[ing] about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying.” *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1317 (9th Cir. 1995). An opinion is unreliable if it unjustifiably extrapolates from an accepted premise to an unfounded conclusion, *i.e.*, relies only on the “*ipse dixit* of the expert.” *See Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) (in some cases, “there is simply too great an analytical gap between the data and the opinion proffered”). Additionally, given the “powerful and quite misleading” nature of expert testimony, courts possess even “more control” in considering whether to exclude expert testimony under Rule 403. *Daubert*, 509 U.S. at 595 (cleaned up).

“[T]his basic gatekeeping obligation . . . applies to all expert testimony[,]” *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 147 (1999), and is “more...important” for “‘experience-based’”—rather than “science-based”—opinions. *Valencia-Lopez*, 971 F.3d at 898. “A district court abdicates its

gatekeeping role, and necessarily abuses its discretion, when it makes no reliability findings” before admitting expert testimony, and such findings must be “explicit” and not “conclusory[.]” *Holguin*, 51 F.4th at 853, 855 (cleaned up). The expert’s proponent—here, the government—bears the burden of proving admissibility. *Valencia-Lopez*, 971 F.3d at 891.²⁵

The court abused its discretion by dismissing Boylan’s reliability-based challenges to the ATF opinions with only a conclusory statement that the opinions were reliable. (17-ER-3518, 3540-42); *Holguin*, 51 F.4th at 855. Boylan compellingly demonstrated that the ATF unreliably concluded the fire started in the exterior garbage can because its tests didn’t fit the timeline established by the witness statements, that the ATF manipulated evidence to reach its intended results, and that the tests were otherwise inconsistent with the accident conditions.

See infra Part VIII.B.2. Despite Boylan’s reminding the court of its gatekeeping obligation (17-ER-3540), and reraising the issue mid-trial after the government’s evidence undercut a critical premise of its testing (the presence of wind) (1-ER-34), the court declined to entertain Boylan’s motion, reasoning that the issues weren’t relevant to reliability, and only fodder for cross-examination. (1-ER-35-38; 17-ER-3540-42) This was error. *E.g.*, *Gopalratnam v. Hewlett-Packard Co.*, 877

²⁵ In 2023, Rule 702 was amended to reaffirm the “essential” nature of “judicial gatekeeping.” *Id.*, Note (2023).

F.3d 771, 786 (7th Cir. 2017) (where fire testing that forms the “premise underlying [an expert’s] conclusion” ultimately “stand[s] for the countervailing proposition[,]” that conclusion is unreliable). Moreover, as this Court has explained, saying a defendant’s reliability concerns can be addressed on cross-examination “is *not* a reliability determination.” *Valencia-Lopez*, 971 F.3d at 897-98.

The court further erred by failing to make *any* reliability findings about Tortora’s testimony regarding the “primary cause” of marine casualties and fires being a lack of training, that fire is the “most dangerous” event to a mariner, and what “prudent seamanship” means for a small-dive-boat captain. Tortora disclosed no underlying data supporting his quantitative opinions, despite, for instance, significant quantitative evidence showing boat fires are exceptionally rare. (2-ER-315-16) And, the “experience” which purportedly undergirded his opinions was cabined to teaching regulations and captaining large military vessels, and therefore had dubious relevance. *Conception*-sized vessels fell outside his experience, at most qualifying him to opine on Coast Guard regulations, not the sweeping conclusion that Boylan hadn’t exercised “prudent seamanship.” Nothing about Tortora’s experience qualified him to reliably conclude that Boylan’s conduct was the critical “link” that “le[d]” to the deaths. *See infra* Part VIII.B.3.

Despite these clear inadequacies, the court repeatedly shifted the burden to Boylan and never conducted the required reliability inquiry. Although the government bore the burden of proving reliability, *Valencia-Lopez*, 971 F.3d at 891, the court faulted Boylan for not having “shown[,]” “demonstrated[,]” or “provided any” reason why Tortora’s testimony shouldn’t be admitted. (1-ER-26-27, 31; 3-ER-374-75) But the question wasn’t whether Boylan proved Tortora’s testimony was *not* reliable, but whether the government proved it *was*.

Furthermore, dismissing Boylan’s *reliability* objections as for cross-examination, while only reaching the question of Tortora’s *qualifications*, improperly “conflate[d]” reliability and qualification. (1-ER-26-34); *Holguin*, 51 F.4th at 854. The court’s actions were especially concerning because Tortora’s testimony was entirely ““experience-based[,]”” which demands more rigorous gatekeeping than science-based opinions. *Valencia-Lopez*, 971 F.3d at 898. Tortora needed to ““explain in...detail the knowledge, investigatory facts and evidence”” supporting his opinions and “how his expertise lent itself to [his] conclusion[s][,]” but failed to do so. *Id.* at 900.

This Court has repeatedly warned that gatekeeping seeks to avoid “potentially prejudicial” expert testimony that cross-examination cannot cure. *Holguin*, 51 F.4th at 853; *see id.* at 868-69 (Berzon, J., concurring and dissenting). But the court’s failure to exercise that function permitted highly prejudicial

testimony regarding, among other things, simulations incompatible with the objective facts, leaving Boylan unable to exercise his critical, “broad[]” right to effectively cross-examine not just the ATF experts, but Tortora regarding the facts “underlying” his ultimate, legal conclusion that Boylan’s conduct caused death.

Jensen v. EXC, Inc., 82 F.4th 835, 847-48 (9th Cir. 2023); see *infra* Parts VIII.B.2-4.

2. The origin opinions were unreliable, and the supporting experiments were not substantially similar to the accident.

Beyond its procedural error of failing to make proper reliability findings, the court substantively abused its discretion by admitting the ATF experts’ origin opinions, which relied on testing that contradicted and mischaracterized the relevant facts, and was otherwise not substantially similar to the *Conception* accident. This Court should thus make a finding the opinions were unreliable and/or the simulations weren’t substantially similar and reverse. *Bacon*, 979 F.3d at 769.

A. The origin conclusions were premised upon the alleged consistency of the simulations and the timeline established by the crewmembers’ statements. The standards published by the National Fire Prevention Association (“NFPA”) require

such consistency when developing origin hypotheses,²⁶ emphasizing that ensuring “the growth and development of a fire starting at the hypothetical origin [is] consistent with available data at a specific point(s) in time.” NFPA 921: Guide for Fire and Explosion Investigations, § 18.6.1. But that consistency was completely lacking here, rendering the conclusions unreliable.

The 36 minutes between Kohls’ looking at the clock at 2:35 and his looking down the stairway (minutes before Boylan’s 3:14 mayday call) was the most conservative outer limit for the fire’s development. *See supra* Part V.A. Even accepting *arguendo* the testing conditions’ similarity, the only full-scale garbage-can test without a breeze took over 50 minutes to develop. Most of the intermediate-scale tests took longer to develop, meaning that they couldn’t have reflected what witnesses say occurred on the boat, but the ATF nevertheless included them in the timing averages it used to reach its bottom-line conclusion that a fire starting in the trash can could’ve been both fast enough to meet the timeline described by crewmembers and slow enough that roving patrols or other measures could’ve saved life. Moreover, those intermediate-scale tests within the

²⁶ Hill claimed NFPA membership and cited NFPA standards. (24-ER-5774; 25-ER-5799, 5931)

timeline mostly failed to match Kohls' physical descriptions.²⁷ The experts declined to explain their disregard of the objective timeline and thus NFPA standards.

One full-scale garbage-can test—including a fan to simulate a breeze—did fit the timeline, but that “breeze” theory was flawed. First, contrary to crewmembers’ descriptions, that test fire didn’t show first on the starboard side, and only Kohls reported wind, contrary to all other witness statements. (24-ER-5535-36) Second, every trial witness to discuss wind disavowed it, and the government didn’t elicit Kohls’ prior statement. (1-ER-34) Third, and most importantly, the ATF added the fan based on two contradictory statements: Kohls’ prior account of a stern-to-bow breeze and the weather service’s indication of a bow-to-stern breeze. (10-ER-2013-14, 2028-29, 2089, 2122-23) Pressed on this contradiction, Hill admitted that a front-anchored vessel (like the *Conception*) naturally orients into the wind (*i.e.*, bow-to-stern)—the *opposite* direction of the fan in his simulations. (10-ER-2125-26) This admission unmoored the only full-scale garbage-can test arguably consistent with the ATF’s timeline from the case’s facts, and cemented the garbage-can theory’s unreliability. These defects alone

²⁷ The intermediate-scale tests also switched several variables without explanation, and didn’t account for moisture on the paper towels. (10-ER-2008-09; 24-ER-5571-72)

warrant reversal. *Joiner*, 522 U.S. at 144-45 (opinion’s “dissimilar[ity] to the facts” undercuts reliability); *Daubert*, 509 U.S. at 591 (results must be “sufficiently tied to the facts” to “aid the jury” (cleaned up)).

B. The ATF experts otherwise impermissibly manipulated the evidence to fit their garbage-can theory. *See, e.g., In re Lipitor (Atorvastatin Calcium) Mktg., Sales Pracs. & Prod. Liab. Litig.*, 892 F.3d 624, 634 (4th Cir. 2018) (“Result-driven analysis, or cherry-picking, undermines principles of the scientific method and is a quintessential example of applying methodologies (valid or otherwise) in an unreliable fashion.”).

The garbage-can theory was premised on how witnesses—particularly Kohls—described the fire, but Hill misstated how Kohls described the fire, and altered Molitor’s and French’s descriptions to fit his mischaracterization of Kohls’ description. (24-ER-5536-43) Although Kohls repeatedly stated that when he woke up and first looked down the stairs, the vessel’s third bathroom and starboard side were on fire (24-ER-5536-38), neither full-scale garbage-can fire (Tests 4 and 5) showed the third bathroom on fire at a time when someone could stand at the top of the stairway and look down (*i.e.*, before flames had so engulfed the staircase as to make it impossible to see the bathroom on fire). (24-ER-5538) But Hill excluded the full-scale salon fires (Tests 1 and 3) after observing flames extending out of the stairway opening. So, he could only avoid also excluding the full-scale garbage-

can tests by, contrary to NFPA 921 and *Daubert*, distorting Kohls' description as only encompassing fire at the bottom of the staircase, and not in the bathroom and on the starboard side.²⁸ (24-ER-5539; 25-ER-5957, 5960); *see, e.g.*, *Guillory v. Domtar Indus., Inc.*, 95 F.3d 1320, 1331 (5th Cir. 1996) (altered facts and speculation warranted exclusion). And, although Molitor and French consistently recalled seeing “flames” *coming out* of the staircase area and over the side or rail, Hill distorted those statements as seeing a “glow at the staircase” to match Kohls’ purported account of a small fire at the bottom of the staircase, as in Tests 4 and 5. (24-ER-5540-43; 25-ER-5957-58, 5960)

These distortions extended to Kohls’ description of the fire after he jumped to the main deck. Kohls consistently stated there was a ““wall of fire”” that ““engulfed the galley”” such that he couldn’t see the escape hatch inside. (24-ER-5543-45) But the tests didn’t reflect a “wall of fire,” so Hill falsely claimed Kohls said he *could* see the escape hatch. (*Id.*; *see* 24-ER-5588; 25-ER-5958, 5964)

Even where Hill *accurately* described witness statements, he claimed that witnesses must be mistaken simply because their statements didn’t match his test results. Kohls’ statement regarding the fire at the bottom of the staircase was a

²⁸ Indeed, *no* test showed fire traveling from the garbage can to the bathroom, igniting the bathroom and starboard side, and remaining on the bottom rung of the staircase—an outcome contrary to basic fire dynamics, as the NTSB concluded. (24-ER-5539)

prime example. The twenty intermediate-scale tests yielded fire there in only two tests. In eight of the tests, fire instead extended up to light a shelf that extended back from a step halfway down the staircase. Despite otherwise relying on Kohls' statements to support his opinion, Hill tried to explain away these results by claiming that Kohls was likely mistaken and had confused a fire halfway down the staircase with one at the bottom rung, even though Kohls explicitly disclaimed a fire mid-staircase. (24-ER-5545) The ATF used this claim to count the eight tests that ignited the shelf as consistent with Kohls' account, even though their test photographs showed no fire at the bottom rung or near the bathroom. (24-ER-5545-46)²⁹

And, *half* of the intermediate-scale tests placed items in a different location than the ATF investigators determined from the wreckage that they had occupied during the fire—closer to the wall and life ring, causing fires to develop more

²⁹ Another example was the crewmembers' consistent descriptions of the starboard side as impassable with fire before the port side. Because Test 4 showed the starboard side open, Hill claimed the crewmembers were mistaken and speculated they saw “fire extension out the salon windows” or “burning along the [starboard-side] soffit[.]” (24-ER-5546-48) Additionally, Test 5 (with fan) showed fire out the port-side windows first, unlike Test 4 and contrary to what Kohls described. But Hill didn't exclude Test 5, instead reasoning that based on Test 4 (without a fan), “investigators kn[e]w it [was] possible for fire to first appear on the starboard side” for a garbage-can fire. (24-ER-5547) But because Test 4 *didn't* use a fan, what happened in that test couldn't be reliably applied to Test 5, which *did* use a fan and initially resulted in a port-side fire.

quickly and frequently. (24-ER-5548, 5582-83) Despite their yielding overinflated results divorced from the facts, these tests were included to support the ATF's garbage-can theory. (24-ER-5548; 25-ER-5929-30)

C. Finally, the simulations weren't otherwise substantially similar to the *Conception* fire. See, e.g., *Vigilant Ins. v. Sunbeam Corp.*, 231 F.R.D. 582, 594-95 (D. Ariz. 2005) (Murguia, J.) (excluding burn test based on differences in the heat applied to coffee maker, the amount of water in coffee pot, and thickness of counter top); *Fireman's Fund Ins. Co. v. Cannon U.S.A., Inc.*, 394 F.3d 1054, 1060 (8th Cir. 2005) (affirming exclusion of experts' fire-origin opinions for failing to address flaws in underlying experimental testing recreating fire, which would've prompted confusion).

Beyond the above-discussed inaccuracies, the models materially differed from the *Conception*'s construction. Research shows that boat fire dynamics are "predominantly affected by vent flows through hatch openings, confined engine compartments, concealed spaces, limited air available, and construction materials." (27-ER-6624) But the testing considered neither the *Conception*'s gunwales (the hull's top edge protecting the main deck from wind), nor electrical, heating, and plumbing systems concealed throughout the vessel. (24-ER-5552-53) Unlike in building construction, these systems weren't "required to be sealed" and thus posed fire risk. (27-ER-6624) Likewise, the ATF's intermediate-scale

reconstruction used no fiberglass. And the fiberglass used in full-scale models wasn't identical the *Conception*'s, nor used on the soffit (*i.e.*, overhang). (24-ER-5554) This mattered because, as Butta testified, the uniquely flammable *Conception* fiberglass played a "big role" in the fire's spread (10-ER-1979-80), and the ATF used Kohls and Molitor's descriptions of fiberglass melting from the soffit as a benchmark for testing. (24-ER-5554; 25-ER-5805, 5817) But because the ATF decided, without explanation, to practically exclude the material as beyond their testing's "scope," its effects couldn't be analyzed. (10-ER-2006-07)³⁰

The tests also disregarded the charging lithium batteries and electronics in the salon. (24-ER-5555) Lithium batteries exposed to fire enter thermal runaway, creating a "feedback" loop that expedites the fire's "destructive result[s]." (*Id.*) Batteries from the wreckage showed severe fire damage, but the ATF disregarded this possible significant fuel source. (*Id.*)

The garbage-can ignition was similarly infirm. Kohls stated he emptied discarded paper towels into the main garbage can under the staircase that night. But that garbage can was also used to discard "'anything'" else and was "'pretty full'" that night. (24-ER-5556-57) For the simulations, however, investigators

³⁰ Moreover, Butta's estimating the salon's dimensions using pre-fire photographs, while citing no studies or peer-reviewed articles favoring his methodology, failed to meet the government's burden of establishing substantial similarity. (24-ER-5555-56)

measured 200 two-foot paper towels and crumpled them, then set them on fire with a lighter at the back of the garbage can. (*Id.*) Finally, no methodology or basis explained how a fan placed on the floor of a warehouse in Maryland directly in front of a garbage can simulated a Santa Cruz Island coastal breeze. (24-ER-5551)³¹

Summing up: the ATF opinions were inconsistent with the evidence, or, at minimum, speculative and a product of meaningfully dissimilar simulations. Deferring the challenges to such complicated, yet thoroughly defective, testimony for cross-examination was inadequate. *See Guillory*, 95 F.3d at 1329-32 (“The jury, frantically grasping at complex...concepts, could easily miss subtle distinctions revealed on cross-examination and then drown in the untrue and the unproven.”). Because the government failed to demonstrate the ATF’s methodology was reliably applied to the facts, admitting the origin conclusions violated Rules 401, 403, 702, and 703.

³¹ As explained, airflow was imperative for the garbage-can tests to fit the timeline, but the salon-originating full-scale fires involved no airflow, and were extinguished within minutes. (24-ER-5589; 10-ER-2028, 2087) These disparities underscore the testing’s results-driven nature.

3. Tortora's opinions were unqualified, unreliable, and/or ultimate legal conclusions.

The court's misapplication of *Daubert* escalated with Captain Tortora's testimony, amplifying the ATF opinions' prejudicial effect, and giving rise to several more independent bases for reversal. *Bacon*, 979 F.3d at 769.

First, Tortora's opinions that fire is the "most dangerous event" at sea and that the "biggest cause" of marine casualties is lack of training were unreliable. Generally referencing Tortora's academic "experience" and "research"—without providing supporting data or syllabi from Tortora's coursework regarding these quantitative conclusions—was insufficient. (2-ER-224-25, 311-17); *Valencia-Lopez*, 971 F.3d at 898-900; *see, e.g., Samuels v. Holland-American Line-USA Inc.*, 656 F.3d 948, 952-53 (9th Cir. 2011) ("common" nature of phenomenon excludable for not disclosing supporting materials). That the NTSB's quantitative study reached conclusions *opposite* to Tortora's further eroded his already-unsupported opinions. (2-ER-315-16) These shortcomings rendered the opinions unreliable and hamstrung Boylan's "broad[]" cross-examination right regarding those opinions. *Jensen*, 82 F.4th 847-48.

Second, Tortora's opinions on "prudent seamanship" were unqualified, unreliable, and unfairly prejudicial because Tortora only possessed practical experience on vastly larger vessels. (2-ER-258-59; 3-ER-380-83) Tortora was familiar with *regulations* applicable to smaller vessels, and certainly could captain

such a vessel. But because Tortora lacked hands-on experience with dive boats like the *Conception*, he wasn't qualified to extrapolate more broadly that Boylan acted *imprudently* merely from regulatory noncompliance, particularly where Boylan showed he followed then-widely-accepted practices. Tortora's "prudent seamanship" opinions harmfully tracked the pertinent criminal acts alleged against Boylan; but his opinion on the roving-patrol theory did even *worse* because the applicable regulation didn't define how often a roving patrol was required, and Tortora's practical experience couldn't bridge that "analytical gap[.]" *Joiner*, 522 U.S. at 146; *see, e.g.*, *Diviero v. Uniroyal Goodrich Tire Co.*, 114 F.3d 851, 853 (9th Cir. 1997) (proper "expert testimony...does not include unsubstantiated speculation and subjective beliefs"); (1-ER-29-31).

Third, and accepting *arguendo* the ATF evidence's admissibility, Tortora's causation opinions lacked qualification and otherwise violated Rule 403 because Tortora lacked expertise in reconstructing accidents or assessing causation. The government conceded as much. (1-ER-57; *see* 11-ER-2384, 2387-88) Tortora's opinions consequently relied on the ATF's outcomes without any understanding of them, and otherwise relied on a cellphone video the jury was equally qualified to interpret. *See Meder v. Everest & Jennings, Inc.*, 637 F.2d 1182, 1188 (8th Cir. 1981) (causation testimony inadmissible where expert lacked accident reconstruction experience and completely relied on another person's report). After

the court sustained the government's qualification objections to Boylan's attempts to cross-examine Tortora on the precise topics the government had elicited on direct, Boylan was left unable to effectively probe Tortora's powerful, conclusory opinions. *See United States v. Dorsey*, 122 F.4th 850, 858 n.2 (9th Cir. 2024) (cross-examination of an expert who simply parrots another is usually “[in]effective”).

Fourth, Tortora's testimony that Boylan didn't perform his regulatory duties and that this “[mis]conduct” or lack of “prudent seamanship” resulted in the 34 deaths were impermissible legal conclusions. (11-ER-2256-57, 2264-65, 2276-79) Although an expert may opine on an ultimate issue of fact, “this court has repeatedly affirmed that an expert witness cannot give an opinion as to her *legal conclusion*, i.e., an opinion on an ultimate issue of law.” *United States v. Diaz*, 876 F.3d 1194, 1197 (9th Cir. 2017) (emphasis in original) (citations omitted). An ultimate legal conclusion uses terms with “specialized meaning in law[,]” *see id.* at 1198-99, or “necessarily...impl[ies]” a legal standard. *Valencia-Lopez*, 971 F.3d at 903. Such testimony improperly “usurp[s] either the role of the trial judge in instructing the jury as to the applicable law or the role of the jury in applying that law to the facts before it[,]” and is distinctly problematic when it “track[s]...language of the statutes and regulations” charged. *United States v. Duncan*, 42 F.3d 97, 101 (2d Cir. 1994).

Saying what federal regulations require and that someone violated them, as Tortora testified, improperly “instruct[s] the jury” on “how it should decide” the application of the law to the facts. *Nationwide Transp. Fin. v. Cass Info. Sys.*, 523 F.3d 1051, 1059 (9th Cir. 2008); *In re Air Disaster at Lockerbie Scotland on Dec. 21, 1988*, 37 F.3d 804, 826 (2d Cir. 1994). It also elevated the risk of the negligence-per-se finding promoted by the court’s erroneous instructions. (2-ER-321); *see supra* Part VIII.A.1. Likewise, pronouncing that conduct isn’t “justified” or “reasonable”—like Tortora’s “prudent seamanship” testimony—impermissibly conveys a “legal standard” akin to negligence. *Hygh v. Jacobs*, 961 F.2d 359, 364 (2d Cir. 1992); *United States v. Brown*, 871 F.3d 532, 539 (7th Cir. 2017). And, opining that Boylan’s conduct “le[d]” to the 34 deaths, that the deaths wouldn’t have “happen[ed]” without Boylan’s conduct, and that the lack of roving patrol was a necessary “link” in the causation chain, wrongly imparted a causation conclusion. (11-ER-2276-79); *see, e.g., Santiago Garcia v. Costco Wholesale Corp.*, No. 19-cv-1082-SCC-BJM, 2020 WL 8575169, at *6-7 (D.P.R. July 23, 2020) (testimony that conduct “led to” an injury inadmissible); *Asbury v. MNT, Inc.*, No. 12-cv-252-KG-RHS, 2014 WL 6674475, at *15 (D.N.M. Aug. 6, 2014) (same; accident “preventable” absent conduct).

In sum, the court erroneously authorized the government's expert to sketch a roadmap for the jury's ultimate legal determinations, devoid of the necessary qualifications and reliable foundation.

4. The errors weren't harmless.

The government cannot meet its burden of showing the "same verdict" was "probable" absent this erroneous evidence. *Valencia-Lopez*, 971 F.3d at 902 (cleaned up). Tortora's quantitative and "prudent seamanship" opinions imparted, with an invaluable expert veneer, that the accident was foreseeable, undermining Boylan's countervailing industry-standard evidence showing he acted prudently, and wasn't grossly negligent.

Causation was the other core trial issue, and the ATF's experimental testing was the government's sole evidence purporting to show a fire spreading slowly enough that a roving patrol or other safety measure would've been lifesaving, notwithstanding uniform testimony describing a fast-moving blaze. The government's rebuttal misleadingly vouched for the experiments as "incredibly thorough[.]" (14-ER-3225) It argued wind "d[id]n't matter" because all tests comported with the "timeline" showing the fire was "fightable[,]” (*id.*), even though *none* of the tests aligned with the evidence.

That prejudice was enhanced when Tortora opined on ultimate legal questions without adequate qualification, reliable foundation, or familiarity with

the testing underlying his opinions.³² No other witness synthesized the two critical issues facing the jury like Tortora. The jury was already operating under diluted legal standards, *see supra* Part VIII.A, but this powerful testimony usurped any remaining role it had.

Convicting Boylan required proving negatives. The government leaned heavily on its experts to fill in the blanks, but could only do so by prejudicially circumventing bedrock evidentiary rules. This Court should reverse.

C. Cumulative errors deprived Boylan of a fair trial.

Even if “each of the above errors, looked at separately, may not rise to the level of reversible error, their cumulative effect may nevertheless be so prejudicial...that reversal is warranted.” *United States v. Wallace*, 848 F.2d 1464, 1475 (9th Cir. 1988). Such is true here: the instructional errors lowered the bar for the government’s proof, and spoon-feeding the jury conclusory and otherwise impermissible expert testimony further eased those burdens. *United States v.*

³² The government emphasized the roving-patrol allegation as “important” (3-ER-387) and its case’s “crux[.]” (17-ER-3520) The jury’s final note suggested it weighed the allegation similarly. (2-ER-130-31) Regardless, the testing was indispensable to the government’s alternative theories because a fast-moving fire undercut the notion that the deaths were avoidable had Boylan sufficiently trained his crew or better responded to the fire.

Frederick, 78 F.3d 1370, 1381 (9th Cir. 1996) (cumulative-error risk is pronounced where evidence is weak).

IX. CONCLUSION

Boylan's conviction should be reversed.

Respectfully submitted,

CUAUHTEMOC ORTEGA
Federal Public Defender

DATED: May 15, 2025

By /s/ Hunter Haney
HUNTER HANEY
Deputy Federal Public Defender
Attorney for Defendant-Appellant

CERTIFICATE OF RELATED CASES

Counsel for appellant certifies that he is unaware of any pending case presenting an issue related to those raised in this brief.

DATED: May 15, 2025

/s Hunter Haney
HUNTER HANEY

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United States Code Annotated

Title 18. Crimes and Criminal Procedure (Refs & Annos)

Part I. Crimes (Refs & Annos)

Chapter 51. Homicide (Refs & Annos)

18 U.S.C.A. § 1115

§ 1115. Misconduct or neglect of ship officers

Currentness

Every captain, engineer, pilot, or other person employed on any steamboat or vessel, by whose misconduct, negligence, or inattention to his duties on such vessel the life of any person is destroyed, and every owner, charterer, inspector, or other public officer, through whose fraud, neglect, connivance, misconduct, or violation of law the life of any person is destroyed, shall be fined under this title or imprisoned not more than ten years, or both.

When the owner or charterer of any steamboat or vessel is a corporation, any executive officer of such corporation, for the time being actually charged with the control and management of the operation, equipment, or navigation of such steamboat or vessel, who has knowingly and willfully caused or allowed such fraud, neglect, connivance, misconduct, or violation of law, by which the life of any person is destroyed, shall be fined under this title or imprisoned not more than ten years, or both.

CREDIT(S)

(June 25, 1948, c. 645, 62 Stat. 757; Pub.L. 103-322, Title XXXIII, § 330016(1)(L), Sept. 13, 1994, 108 Stat. 2147.)

Notes of Decisions (52)

18 U.S.C.A. § 1115, 18 USCA § 1115

Current through P.L. 119-4. Some statute sections may be more current, see credits for details.

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Code of Federal Regulations

Title 46. Shipping

Chapter I. Coast Guard, Department of Homeland Security (Refs & Annos)

Subchapter T. Small Passenger Vessels (Under 100 Gross Tons) (Refs & Annos)

Part 185. Operations (Refs & Annos)

Subpart D. Crew Requirements

46 C.F.R. § 185.410

§ 185.410 Watchmen.

Currentness

(a) The owner, charterer, master, or managing operator of a vessel carrying overnight passengers shall have a suitable number of watchmen patrol throughout the vessel during the nighttime, whether or not the vessel is underway, to guard against, and give alarm in case of, a fire, man overboard, or other dangerous situation.

(b) Vessels described by [46 CFR 175.110\(d\)](#) must submit plans to the cognizant OCMI, in accordance with [46 CFR 176.700](#), for the installation and use of monitoring device to ensure the wakefulness of the watchmen required in paragraph (a) of this section. Vessels with a keel laid date after March 28, 2022, must include plans for the monitoring device(s) within the plan submissions required in [46 CFR 177.202](#). The Coast Guard will work with the vessel operators to determine a reasonable implementation schedule once the plans are accepted. The monitoring device(s) must:

(1) Ensure the wakefulness of the crew in the event that the watchman required in paragraph (a) of this section is unresponsive;

(2) Remain operable during the nighttime watch; and

(3) Be arranged to ensure proper coverage of the passenger accommodation spaces, common areas, and spaces with potential fire hazards.

Credits

[CGD 85-080, [62 FR 51359](#), Sept. 30, 1997; USCG-2021-0306, [86 FR 73172](#), Dec. 27, 2021]

SOURCE: CGD 85-080, [61 FR 1005](#), Jan. 10, 1996; CGD 85-080, [61 FR 946](#), Jan. 10, 1996; [62 FR 51347](#), Sept. 30, 1997; [68 FR 16953](#), April 8, 2003; USCG-2004-18884, [69 FR 58351](#), Sept. 30, 2004; USCG-2021-0306, [86 FR 73172](#), Dec. 27, 2021; USCG-2025-0186, [90 FR 12238](#), March 17, 2025, unless otherwise noted.

AUTHORITY: [46 U.S.C. 2103, 3306, 6101](#); [E.O. 12234](#), [45 FR 58801](#), [3 CFR](#), 1980 Comp., p. 277; DHS Delegation 00170.1, Revision No. 01.2, paragraph (II)(92)(a).

Current through March 27, 2025, 90 FR 13847. Some sections may be more current. See credits for details.

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Title 46. Shipping

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Subchapter T. Small Passenger Vessels (Under 100 Gross Tons) (Refs & Annos)

Part 185. Operations (Refs & Annos)

Subpart E. Preparations for Emergencies

46 C.F.R. § 185.524

§ 185.524 Fire fighting drills and training.

Currentness

(a) The master shall conduct sufficient fire drills to make sure that each crew member is familiar with his or her duties in case of a fire.

(b) Each fire drill must include:

(1) Summoning passengers on a vessel on an overnight voyage to muster or embarkation stations;

(2) Summoning the crew to report to assigned stations and to prepare for and demonstrate assigned duties; and

(3) Instruction in the use and location of fire alarms, extinguishers, and any other fire fighting equipment on board.

(c) Each fire drill must, as far as practicable, be conducted as if there were an actual emergency.

(d) Fire fighting drills and training shall be logged or otherwise documented for review by the Coast Guard upon request. The drill entry shall include the following information:

(1) Date of the drill and training; and

(2) General description of the drill scenario and training topics.

Credits

[CGD 85-080, [62 FR 51359](#), Sept. 30, 1997]

SOURCE: CGD 85-080, [61 FR 1005](#), Jan. 10, 1996; CGD 85-080, [61 FR 946](#), Jan. 10, 1996; [62 FR 51347](#), Sept. 30, 1997; [68 FR 16953](#), April 8, 2003; USCG-2004-18884, [69 FR 58351](#), Sept. 30, 2004; USCG-2021-0306, [86 FR 73172](#), Dec. 27, 2021; USCG-2025-0186, [90 FR 12238](#), March 17, 2025, unless otherwise noted.

AUTHORITY: [46 U.S.C. 2103, 3306, 6101](#); [E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp.](#), p. 277; DHS Delegation 00170.1, Revision No. 01.2, paragraph (II)(92)(a).

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Title 46. Shipping

Chapter I. Coast Guard, Department of Homeland Security (Refs & Annos)

Subchapter T. Small Passenger Vessels (Under 100 Gross Tons) (Refs & Annos)

Part 185. Operations (Refs & Annos)

Subpart D. Crew Requirements

46 C.F.R. § 185.420

§ 185.420 Crew training.

Currentness

(a) The owner, charterer, master or managing operator shall instruct each crew member, upon first being employed and prior to getting underway for the first time on a particular vessel and at least once every three months, as to the duties that the crew member is expected to perform in an emergency including, but not limited to, the emergency instructions listed on the emergency instruction placard required by § 185.510 of this part and, when applicable, the duties listed in the station bill required by § 185.514 of this part.

(b) For a vessel described by 46 CFR 175.110(c), the training program in paragraph (a) of this section must address firefighting proficiency and must include, but need not be limited to—

(1) Training in the use and location of firefighting equipment and general firefighting knowledge, including:

(i) Location of firefighting appliances and emergency escape routes;

(ii) Types and sources of ignition;

(iii) Flammable materials, fire hazards and spread of fire;

(iv) The need for constant vigilance;

(v) Actions to be taken on board;

(vi) Fire and smoke detection and automatic systems on board; and

(vii) Classification of fire and applicable extinguishing agents.

(2) The drills required by § 185.524, including fire location and fire type; and

(3) Emergency egress training for each member of the crew, to occur for all members of the crew—

(i) At least monthly while such members are employed on board the vessels; and

(ii) Each time a crew member joins the crew of such vessel.

(c) Training conducted on a sister vessel may be considered equivalent to the initial, monthly, and quarterly training requirements contained in paragraphs (a) and (b) of this section.

(d) Crew training shall be logged or otherwise documented for review by the Coast Guard upon request. The training entry shall include the following information.

(1) Date of the training; and

(2) General description of the training topics.

Credits

[CGD 85–080, [62 FR 51359](#), Sept. 30, 1997; USCG–2021–0306, [86 FR 73173](#), Dec. 27, 2021]

SOURCE: CGD 85–080, [61 FR 1005](#), Jan. 10, 1996; CGD 85–080, [61 FR 946](#), Jan. 10, 1996; [62 FR 51347](#), Sept. 30, 1997; [68 FR 16953](#), April 8, 2003; USCG–2004–18884, [69 FR 58351](#), Sept. 30, 2004; USCG–2021–0306, [86 FR 73172](#), Dec. 27, 2021; USCG–2025–0186, [90 FR 12238](#), March 17, 2025, unless otherwise noted.

AUTHORITY: [46 U.S.C. 2103, 3306, 6101](#); [E.O. 12234](#), [45 FR 58801](#), [3 CFR, 1980 Comp.](#), p. 277; DHS Delegation 00170.1, Revision No. 01.2, paragraph (II)(92)(a).

Current through March 27, 2025, [90 FR 13847](#). Some sections may be more current. See credits for details.

Code of Federal Regulations

Title 46. Shipping

Chapter I. Coast Guard, Department of Homeland Security (Refs & Annos)

Subchapter T. Small Passenger Vessels (Under 100 Gross Tons) (Refs & Annos)

Part 185. Operations (Refs & Annos)

Subpart E. Preparations for Emergencies

46 C.F.R. § 185.510

§ 185.510 Emergency instructions.

Currentness

(a) The master and crew of a vessel will be familiar with the content of and have mounted at the operating station, emergency instructions containing the actions to be taken in the event of fire, heavy weather, or man overboard conditions.

(b) Except when in the judgment of the cognizant OCMI the operation of a vessel does not present one of the hazards listed, the emergency instruction placard should contain at least the applicable portions of the “Emergency Instructions” listed in § 185.512. The emergency instructions must be designed to address the particular equipment, arrangement, and operation of each individual vessel.

(c) If the cognizant OCMI determines that there is no suitable mounting surface aboard the vessel, the emergency instructions need not be posted but must be carried aboard the vessel and be available to the crew for familiarization.

SOURCE: CGD 85–080, [61 FR 1005](#), Jan. 10, 1996; CGD 85–080, [61 FR 946](#), Jan. 10, 1996; [62 FR 51347](#), Sept. 30, 1997; [68 FR 16953](#), April 8, 2003; USCG–2004–18884, [69 FR 58351](#), Sept. 30, 2004; USCG–2021–0306, [86 FR 73172](#), Dec. 27, 2021; USCG–2025–0186, [90 FR 12238](#), March 17, 2025, unless otherwise noted.

AUTHORITY: [46 U.S.C. 2103, 3306, 6101](#); [E.O. 12234](#), [45 FR 58801](#), 3 CFR, 1980 Comp., p. 277; DHS Delegation 00170.1, Revision No. 01.2, paragraph (II)(92)(a).

Current through March 27, 2025, [90 FR 13847](#). Some sections may be more current. See credits for details.

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United States Code Annotated
Federal Rules of Evidence (Refs & Annos)
Article IV. Relevance and Its Limits

Federal Rules of Evidence Rule 401, 28 U.S.C.A.

Rule 401. Test for Relevant Evidence

Currentness

Evidence is relevant if:

- (a) it has any tendency to make a fact more or less probable than it would be without the evidence; and
- (b) the fact is of consequence in determining the action.

CREDIT(S)

([Pub.L. 93-595](#), § 1, Jan. 2, 1975, 88 Stat.1931; Apr. 26, 2011, eff. Dec. 1, 2011.)

ADVISORY COMMITTEE NOTES
1972 Proposed Rules

Problems of relevancy call for an answer to the question whether an item of evidence, when tested by the processes of legal reasoning, possesses sufficient probative value to justify receiving it in evidence. Thus, assessment of the probative value of evidence that a person purchased a revolver shortly prior to a fatal shooting with which he is charged is a matter of analysis and reasoning.

The variety of relevancy problems is coextensive with the ingenuity of counsel in using circumstantial evidence as a means of proof. An enormous number of cases fall in no set pattern, and this rule is designed as a guide for handling them. On the other hand, some situations recur with sufficient frequency to create patterns susceptible of treatment by specific rules. Rule 404 and those following it are of that variety; they also serve as illustrations of the application of the present rule as limited by the exclusionary principles of Rule 403.

Passing mention should be made of so-called "conditional" relevancy. Morgan, Basic Problems of Evidence 45-46 (1962). In this situation, probative value depends not only upon satisfying the basic requirement of relevancy as described above but also upon the existence of some matter of fact. For example, if evidence of a spoken statement is relied upon to prove notice, probative value is lacking unless the person sought to be charged heard the statement. The problem is one of fact, and the only rules needed are for the purpose of determining the respective functions of judge and jury. See Rules 104(b) and 901. The discussion which follows in the present note is concerned with relevancy generally, not with any particular problem of conditional relevancy.

Relevancy is not an inherent characteristic of any item of evidence but exists only as a relation between an item of evidence and a matter properly provable in the case. Does the item of evidence tend to prove the matter sought to be proved? Whether the relationship exists depends upon principles evolved by experience or science, applied logically to the situation at hand. James, Relevancy, Probability and the Law, 29 Calif.L.Rev. 689, 696, n. 15 (1941), in Selected Writings on Evidence and Trial 610,

615, n. 15 (Fryer ed. 1957). The rule summarizes this relationship as a “tendency to make the existence” of the fact to be proved “more probable or less probable.” Compare Uniform Rule 1(2) which states the crux of relevancy as “a tendency in reason,” thus perhaps emphasizing unduly the logical process and ignoring the need to draw upon experience or science to validate the general principle upon which relevancy in a particular situation depends.

The standard of probability under the rule is “more * * * probable than it would be without the evidence.” Any more stringent requirement is unworkable and unrealistic. As McCormick § 152, p. 317, says, “A brick is not a wall,” or, as Falknor, Extrinsic Policies Affecting Admissibility, 10 Rutgers L.Rev. 574, 576 (1956), quotes Professor McBaine, “* * * [I]t is not to be supposed that every witness can make a home run.” Dealing with probability in the language of the rule has the added virtue of avoiding confusion between questions of admissibility and questions of the sufficiency of the evidence.

The rule uses the phrase “fact that is of consequence to the determination of the action” to describe the kind of fact to which proof may properly be directed. The language is that of [California Evidence Code § 210](#); it has the advantage of avoiding the loosely used and ambiguous word “material.” Tentative Recommendation and a Study Relating to the Uniform Rules of Evidence (Art. I. General Provisions), Cal.Law Revision Comm'n, Rep., Rec. & Studies, 10-11 (1964). The fact to be proved may be ultimate, intermediate, or evidentiary; it matters not, so long as it is of consequence in the determination of the action. Cf. Uniform Rule 1(2) which requires that the evidence relate to a “material” fact.

The fact to which the evidence is directed need not be in dispute. While situations will arise which call for the exclusion of evidence offered to prove a point conceded by the opponent, the ruling should be made on the basis of such considerations as waste of time and undue prejudice (see Rule 403), rather than under any general requirement that evidence is admissible only if directed to matters in dispute. Evidence which is essentially background in nature can scarcely be said to involve disputed matter, yet it is universally offered and admitted as an aid to understanding. Charts, photographs, views of real estate, murder weapons, and many other items of evidence fall in this category. A rule limiting admissibility to evidence directed to a controversial point would invite the exclusion of this helpful evidence, or at least the raising of endless questions over its admission. Cf. [California Evidence Code § 210](#), defining relevant evidence in terms of tendency to prove a disputed fact.

2011 Amendments

The language of Rule 401 has been amended as part of the restyling of the Evidence Rules to make them more easily understood and to make style and terminology consistent throughout the rules. These changes are intended to be stylistic only. There is no intent to change any result in any ruling on evidence admissibility.

Notes of Decisions (618)

Fed. Rules Evid. Rule 401, 28 U.S.C.A., FRE Rule 401
Including Amendments Received Through 4-1-2025

United States Code Annotated
Federal Rules of Evidence (Refs & Annos)
Article IV. Relevance and Its Limits

Federal Rules of Evidence Rule 403, 28 U.S.C.A.

Rule 403. Excluding Relevant Evidence for Prejudice, Confusion, Waste of Time, or Other Reasons

Currentness

The court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.

CREDIT(S)

([Pub.L. 93-595](#), § 1, Jan. 2, 1975, 88 Stat. 1932; Apr. 26, 2011, eff. Dec. 1, 2011.)

ADVISORY COMMITTEE NOTES

1972 Proposed Rules

The case law recognizes that certain circumstances call for the exclusion of evidence which is of unquestioned relevance. These circumstances entail risks which range all the way from inducing decision on a purely emotional basis, at one extreme, to nothing more harmful than merely wasting time, at the other extreme. Situations in this area call for balancing the probative value of and need for the evidence against the harm likely to result from its admission. Slough, *Relevancy Unraveled*, 5 Kan.L.Rev. 1, 12-15 (1956); Trautman, *Logical or Legal Relevancy--A Conflict in Theory*, 5 Van.L.Rev. 385, 392 (1952); McCormick § 152, pp. 319-321. The rules which follow in this Article are concrete applications evolved for particular situations. However, they reflect the policies underlying the present rule, which is designed as a guide for the handling of situations for which no specific rules have been formulated.

Exclusion for risk of unfair prejudice, confusion of issues, misleading the jury, or waste of time, all find ample support in the authorities. "Unfair prejudice" within its context means an undue tendency to suggest decision on an improper basis, commonly, though not necessarily, an emotional one.

The rule does not enumerate surprise as a ground for exclusion, in this respect following Wigmore's view of the common law. 6 Wigmore § 1849. Cf. McCormick § 152, p. 320, n. 29, listing unfair surprise as a ground for exclusion but stating that it is usually "coupled with the danger of prejudice and confusion of issues." While Uniform Rule 45 incorporates surprise as a ground and is followed in Kansas Code of Civil Procedure § 60-445, surprise is not included in [California Evidence Code § 352](#) or New Jersey Rule 4, though both the latter otherwise substantially embody Uniform Rule 45. While it can scarcely be doubted that claims of unfair surprise may still be justified despite procedural requirements of notice and instrumentalities of discovery, the granting of a continuance is a more appropriate remedy than exclusion of the evidence. Tentative Recommendation and a Study Relating to the Uniform Rules of Evidence (Art. VI. Extrinsic Policies Affecting Admissibility), Cal.Law Revision Comm'n, Rep., Rec. & Studies, 612 (1964). Moreover, the impact of a rule excluding evidence on the ground of surprise would be difficult to estimate.

In reaching a decision whether to exclude on grounds of unfair prejudice, consideration should be given to the probable effectiveness or lack of effectiveness of a limiting instruction. See Rule 106 [now 105] and Advisory Committee's Note thereunder. The availability of other means of proof may also be an appropriate factor.

2011 Amendments

The language of Rule 403 has been amended as part of the restyling of the Evidence Rules to make them more easily understood and to make style and terminology consistent throughout the rules. These changes are intended to be stylistic only. There is no intent to change any result in any ruling on evidence admissibility.

Notes of Decisions (3159)

Fed. Rules Evid. Rule 403, 28 U.S.C.A., FRE Rule 403
Including Amendments Received Through 4-1-2025

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United States Code Annotated

Federal Rules of Evidence (Refs & Annos)

Article VII. Opinions and Expert Testimony

Federal Rules of Evidence Rule 702, 28 U.S.C.A.

Rule 702. Testimony by Expert Witnesses [Rule Text & Notes of Decisions subdivisions I, II]

Currentness

<Notes of Decisions for 28 USCA Federal Rules of Evidence Rule 702 are displayed in multiple documents.>

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if the proponent demonstrates to the court that it is more likely than not that:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert's opinion reflects a reliable application of the principles and methods to the facts of the case.

CREDIT(S)

([Pub.L. 93-595](#), § 1, Jan. 2, 1975, 88 Stat. 1937; Apr. 17, 2000, eff. Dec. 1, 2000; Apr. 26, 2011, eff. Dec. 1, 2011; Apr. 24, 2023, eff. Dec. 1, 2023.)

ADVISORY COMMITTEE NOTES

1972 Proposed Rules

An intelligent evaluation of facts is often difficult or impossible without the application of some scientific, technical, or other specialized knowledge. The most common source of this knowledge is the expert witness, although there are other techniques for supplying it.

Most of the literature assumes that experts testify only in the form of opinions. The assumption is logically unfounded. The rule accordingly recognizes that an expert on the stand may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts. Since much of the criticism of expert testimony has centered upon the hypothetical question, it seems wise to recognize that opinions are not indispensable and to encourage the use of expert testimony in non-opinion form when counsel believes the trier can itself draw the requisite inference. The use of opinions is not abolished by the rule, however. It will continue to be permissible for the experts to take the further step of suggesting the inference which should be drawn from applying the specialized knowledge to the facts. See Rules 703 to 705.

Whether the situation is a proper one for the use of expert testimony is to be determined on the basis of assisting the trier. “There is no more certain test for determining when experts may be used than the common sense inquiry whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute.” Ladd, *Expert Testimony*, 5 Vand.L.Rev. 414, 418 (1952). When opinions are excluded, it is because they are unhelpful and therefore superfluous and a waste of time. 7 Wigmore § 1918.

The rule is broadly phrased. The fields of knowledge which may be drawn upon are not limited merely to the “scientific” and “technical” but extend to all “specialized” knowledge. Similarly, the expert is viewed, not in a narrow sense, but as a person qualified by “knowledge, skill, experience, training or education.” Thus within the scope of the rule are not only experts in the strictest sense of the word, e.g., physicians, physicists, and architects, but also the large group sometimes called “skilled” witnesses, such as bankers or landowners testifying to land values.

2000 Amendments

Rule 702 has been amended in response to *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and to the many cases applying *Daubert*, including *Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167 (1999). In *Daubert* the Court charged trial judges with the responsibility of acting as gatekeepers to exclude unreliable expert testimony, and the Court in *Kumho* clarified that this gatekeeper function applies to all expert testimony, not just testimony based in science. *See also Kumho*, 119 S.Ct. at 1178 (citing the Committee Note to the proposed amendment to Rule 702, which had been released for public comment before the date of the *Kumho* decision). The amendment affirms the trial court's role as gatekeeper and provides some general standards that the trial court must use to assess the reliability and helpfulness of proffered expert testimony. Consistently with *Kumho*, the Rule as amended provides that all types of expert testimony present questions of admissibility for the trial court in deciding whether the evidence is reliable and helpful. Consequently, the admissibility of all expert testimony is governed by the principles of Rule 104(a). Under that Rule, the proponent has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence. *See Bourjaily v. United States*, 483 U.S. 171 (1987).

Daubert set forth a non-exclusive checklist for trial courts to use in assessing the reliability of scientific expert testimony. The specific factors explicated by the *Daubert* Court are (1) whether the expert's technique or theory can be or has been tested---that is, whether the expert's theory can be challenged in some objective sense, or whether it is instead simply a subjective, conclusory approach that cannot reasonably be assessed for reliability; (2) whether the technique or theory has been subject to peer review and publication; (3) the known or potential rate of error of the technique or theory when applied; (4) the existence and maintenance of standards and controls; and (5) whether the technique or theory has been generally accepted in the scientific community. The Court in *Kumho* held that these factors might also be applicable in assessing the reliability of non-scientific expert testimony, depending upon “the particular circumstances of the particular case at issue.” 119 S.Ct. at 1175.

No attempt has been made to “codify” these specific factors. *Daubert* itself emphasized that the factors were neither exclusive nor dispositive. Other cases have recognized that not all of the specific *Daubert* factors can apply to every type of expert testimony. In addition to *Kumho*, 119 S.Ct. at 1175, *see Tyus v. Urban Search Management*, 102 F.3d 256 (7th Cir. 1996) (noting that the factors mentioned by the Court in *Daubert* do not neatly apply to expert testimony from a sociologist). *See also Kannankeril v. Terminix Int'l, Inc.*, 128 F.3d 802, 809 (3d Cir. 1997) (holding that lack of peer review or publication was not dispositive where the expert's opinion was supported by “widely accepted scientific knowledge”). The standards set forth in the amendment are broad enough to require consideration of any or all of the specific *Daubert* factors where appropriate.

Courts both before and after *Daubert* have found other factors relevant in determining whether expert testimony is sufficiently reliable to be considered by the trier of fact. These factors include:

- (1) Whether experts are “proposing to testify about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying.” *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1317 (9th Cir. 1995).

(2) Whether the expert has unjustifiably extrapolated from an accepted premise to an unfounded conclusion. See *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) (noting that in some cases a trial court “may conclude that there is simply too great an analytical gap between the data and the opinion proffered”).

(3) Whether the expert has adequately accounted for obvious alternative explanations. See *Claar v. Burlington N.R.R.*, 29 F.3d 499 (9th Cir. 1994) (testimony excluded where the expert failed to consider other obvious causes for the plaintiff’s condition). Compare *Ambrosini v. Labarque*, 101 F.3d 129 (D.C. Cir. 1996) (the possibility of some uneliminated causes presents a question of weight, so long as the most obvious causes have been considered and reasonably ruled out by the expert).

(4) Whether the expert “is being as careful as he would be in his regular professional work outside his paid litigation consulting.” *Sheehan v. Daily Racing Form, Inc.*, 104 F.3d 940, 942 (7th Cir. 1997). See *Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1176 (1999) (*Daubert* requires the trial court to assure itself that the expert “employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field”).

(5) Whether the field of expertise claimed by the expert is known to reach reliable results for the type of opinion the expert would give. See *Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1175 (1999) (*Daubert*’s general acceptance factor does not “help show that an expert’s testimony is reliable where the discipline itself lacks reliability, as for example, do theories grounded in any so-called generally accepted principles of astrology or necromancy.”), *Moore v. Ashland Chemical, Inc.*, 151 F.3d 269 (5th Cir. 1998) (en banc) (clinical doctor was properly precluded from testifying to the toxicological cause of the plaintiff’s respiratory problem, where the opinion was not sufficiently grounded in scientific methodology); *Sterling v. Velsicol Chem. Corp.*, 855 F.2d 1188 (6th Cir. 1988) (rejecting testimony based on “clinical ecology” as unfounded and unreliable).

All of these factors remain relevant to the determination of the reliability of expert testimony under the Rule as amended. Other factors may also be relevant. See *Kumho*, 119 S.Ct. 1167, 1176 (“[W]e conclude that the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable.”). Yet no single factor is necessarily dispositive of the reliability of a particular expert’s testimony. See, e.g., *Heller v. Shaw Industries, Inc.*, 167 F.3d 146, 155 (3d Cir. 1999) (“not only must each stage of the expert’s testimony be reliable, but each stage must be evaluated practically and flexibly without bright-line exclusionary (or inclusionary) rules.”); *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1317, n.5 (9th Cir. 1995) (noting that some expert disciplines “have the courtroom as a principal theatre of operations” and as to these disciplines “the fact that the expert has developed an expertise principally for purposes of litigation will obviously not be a substantial consideration.”).

A review of the caselaw after *Daubert* shows that the rejection of expert testimony is the exception rather than the rule. *Daubert* did not work a “seachange over federal evidence law,” and “the trial court’s role as gatekeeper is not intended to serve as a replacement for the adversary system.” *United States v. 14.38 Acres of Land Situated in Leflore County, Mississippi*, 80 F.3d 1074, 1078 (5th Cir. 1996). As the Court in *Daubert* stated: “Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” 509 U.S. at 595. Likewise, this amendment is not intended to provide an excuse for an automatic challenge to the testimony of every expert. See *Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1176 (1999) (noting that the trial judge has the discretion “both to avoid unnecessary ‘reliability’ proceedings in ordinary cases where the reliability of an expert’s methods is properly taken for granted, and to require appropriate proceedings in the less usual or more complex cases where cause for questioning the expert’s reliability arises.”).

When a trial court, applying this amendment, rules that an expert’s testimony is reliable, this does not necessarily mean that contradictory expert testimony is unreliable. The amendment is broad enough to permit testimony that is the product of competing principles or methods in the same field of expertise. See, e.g., *Heller v. Shaw Industries, Inc.*, 167 F.3d 146, 160 (3d Cir. 1999) (expert testimony cannot be excluded simply because the expert uses one test rather than another, when both

tests are accepted in the field and both reach reliable results). As the court stated in *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d 717, 744 (3d Cir. 1994), proponents “do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are correct, they only have to demonstrate by a preponderance of evidence that their opinions are reliable.... The evidentiary requirement of reliability is lower than the merits standard of correctness.” *See also Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1318 (9th Cir. 1995) (scientific experts might be permitted to testify if they could show that the methods they used were also employed by “a recognized minority of scientists in their field.”); *Ruiz-Troche v. Pepsi Cola*, 161 F.3d 77, 85 (1st Cir. 1998) (“*Daubert* neither requires nor empowers trial courts to determine which of several competing scientific theories has the best provenance.”).

The Court in *Daubert* declared that the “focus, of course, must be solely on principles and methodology, not on the conclusions they generate.” 509 U.S. at 595. Yet as the Court later recognized, “conclusions and methodology are not entirely distinct from one another.” *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). Under the amendment, as under *Daubert*, when an expert purports to apply principles and methods in accordance with professional standards, and yet reaches a conclusion that other experts in the field would not reach, the trial court may fairly suspect that the principles and methods have not been faithfully applied. *See Lust v. Merrell Dow Pharmaceuticals, Inc.*, 89 F.3d 594, 598 (9th Cir. 1996). The amendment specifically provides that the trial court must scrutinize not only the principles and methods used by the expert, but also whether those principles and methods have been properly applied to the facts of the case. As the court noted in *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 745 (3d Cir. 1994), “any step that renders the analysis unreliable ... renders the expert's testimony inadmissible. This is true whether the step completely changes a reliable methodology or merely misapplies that methodology.”

If the expert purports to apply principles and methods to the facts of the case, it is important that this application be conducted reliably. Yet it might also be important in some cases for an expert to educate the factfinder about general principles, without ever attempting to apply these principles to the specific facts of the case. For example, experts might instruct the factfinder on the principles of thermodynamics, or bloodclotting, or on how financial markets respond to corporate reports, without ever knowing about or trying to tie their testimony into the facts of the case. The amendment does not alter the venerable practice of using expert testimony to educate the factfinder on general principles. For this kind of generalized testimony, Rule 702 simply requires that: (1) the expert be qualified; (2) the testimony address a subject matter on which the factfinder can be assisted by an expert; (3) the testimony be reliable; and (4) the testimony “fit” the facts of the case.

As stated earlier, the amendment does not distinguish between scientific and other forms of expert testimony. The trial court's gatekeeping function applies to testimony by any expert. *See Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1171 (1999) (“We conclude that *Daubert*'s general holding--setting forth the trial judge's general ‘gatekeeping’ obligation--applies not only to testimony based on ‘scientific’ knowledge, but also to testimony based on ‘technical’ and ‘other specialized’ knowledge.”). While the relevant factors for determining reliability will vary from expertise to expertise, the amendment rejects the premise that an expert's testimony should be treated more permissively simply because it is outside the realm of science. An opinion from an expert who is not a scientist should receive the same degree of scrutiny for reliability as an opinion from an expert who purports to be a scientist. *See Watkins v. Telsmith, Inc.*, 121 F.3d 984, 991 (5th Cir. 1997) (“[I]t seems exactly backwards that experts who purport to rely on general engineering principles and practical experience might escape screening by the district court simply by stating that their conclusions were not reached by any particular method or technique.”). Some types of expert testimony will be more objectively verifiable, and subject to the expectations of falsifiability, peer review, and publication, than others. Some types of expert testimony will not rely on anything like a scientific method, and so will have to be evaluated by reference to other standard principles attendant to the particular area of expertise. The trial judge in all cases of proffered expert testimony must find that it is properly grounded, well-reasoned, and not speculative before it can be admitted. The expert's testimony must be grounded in an accepted body of learning or experience in the expert's field, and the expert must explain how the conclusion is so grounded. *See, e.g.*, American College of Trial Lawyers, *Standards and Procedures for Determining the Admissibility of Expert Testimony after Daubert*, 157 F.R.D. 571, 579 (1994) (“[W]hether the testimony concerns economic principles, accounting standards, property valuation or other non-scientific subjects, it should be evaluated by reference to the ‘knowledge and experience’ of that particular field.”).

The amendment requires that the testimony must be the product of reliable principles and methods that are reliably applied to the facts of the case. While the terms “principles” and “methods” may convey a certain impression when applied to scientific knowledge, they remain relevant when applied to testimony based on technical or other specialized knowledge. For example, when a law enforcement agent testifies regarding the use of code words in a drug transaction, the principle used by the agent is that participants in such transactions regularly use code words to conceal the nature of their activities. The method used by the agent is the application of extensive experience to analyze the meaning of the conversations. So long as the principles and methods are reliable and applied reliably to the facts of the case, this type of testimony should be admitted.

Nothing in this amendment is intended to suggest that experience alone--or experience in conjunction with other knowledge, skill, training or education--may not provide a sufficient foundation for expert testimony. To the contrary, the text of Rule 702 expressly contemplates that an expert may be qualified on the basis of experience. In certain fields, experience is the predominant, if not sole, basis for a great deal of reliable expert testimony. *See, e.g., United States v. Jones*, 107 F.3d 1147 (6th Cir. 1997) (no abuse of discretion in admitting the testimony of a handwriting examiner who had years of practical experience and extensive training, and who explained his methodology in detail); *Tassin v. Sears Roebuck*, 946 F.Supp. 1241, 1248 (M.D.La. 1996) (design engineer's testimony can be admissible when the expert's opinions “are based on facts, a reasonable investigation, and traditional technical/mechanical expertise, and he provides a reasonable link between the information and procedures he uses and the conclusions he reaches”). *See also Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1178 (1999) (stating that “no one denies that an expert might draw a conclusion from a set of observations based on extensive and specialized experience.”).

If the witness is relying solely or primarily on experience, then the witness must explain how that experience leads to the conclusion reached, why that experience is a sufficient basis for the opinion, and how that experience is reliably applied to the facts. The trial court's gatekeeping function requires more than simply “taking the expert's word for it.” *See Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1319 (9th Cir. 1995) (“We've been presented with only the experts' qualifications, their conclusions and their assurances of reliability. Under *Daubert*, that's not enough.”). The more subjective and controversial the expert's inquiry, the more likely the testimony should be excluded as unreliable. *See O'Conner v. Commonwealth Edison Co.*, 13 F.3d 1090 (7th Cir. 1994) (expert testimony based on a completely subjective methodology held properly excluded). *See also Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1176 (1999) (“[I]t will at times be useful to ask even of a witness whose expertise is based purely on experience, say, a perfume tester able to distinguish among 140 odors at a sniff, whether his preparation is of a kind that others in the field would recognize as acceptable.”).

Subpart (1) of Rule 702 calls for a quantitative rather than qualitative analysis. The amendment requires that expert testimony be based on sufficient underlying “facts or data.” The term “data” is intended to encompass the reliable opinions of other experts. See the original Advisory Committee Note to Rule 703. The language “facts or data” is broad enough to allow an expert to rely on hypothetical facts that are supported by the evidence. *Id.*

When facts are in dispute, experts sometimes reach different conclusions based on competing versions of the facts. The emphasis in the amendment on “sufficient facts or data” is not intended to authorize a trial court to exclude an expert's testimony on the ground that the court believes one version of the facts and not the other.

There has been some confusion over the relationship between Rules 702 and 703. The amendment makes clear that the sufficiency of the basis of an expert's testimony is to be decided under Rule 702. Rule 702 sets forth the overarching requirement of reliability, and an analysis of the sufficiency of the expert's basis cannot be divorced from the ultimate reliability of the expert's opinion. In contrast, the “reasonable reliance” requirement of Rule 703 is a relatively narrow inquiry. When an expert relies on inadmissible information, Rule 703 requires the trial court to determine whether that information is of a type reasonably relied on by other experts in the field. If so, the expert can rely on the information in reaching an opinion. However, the question whether the expert is relying on a *sufficient* basis of information--whether admissible information or not--is governed by the requirements of Rule 702.

The amendment makes no attempt to set forth procedural requirements for exercising the trial court's gatekeeping function over expert testimony. *See* Daniel J. Capra, *The Daubert Puzzle*, 38 Ga.L.Rev. 699, 766 (1998) ("Trial courts should be allowed substantial discretion in dealing with *Daubert* questions; any attempt to codify procedures will likely give rise to unnecessary changes in practice and create difficult questions for appellate review."). Courts have shown considerable ingenuity and flexibility in considering challenges to expert testimony under *Daubert*, and it is contemplated that this will continue under the amended Rule. *See, e.g.*, *Cortes-Irizarry v. Corporacion Insular*, 111 F.3d 184 (1st Cir. 1997) (discussing the application of *Daubert* in ruling on a motion for summary judgment); *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 736, 739 (3d Cir. 1994) (discussing the use of *in limine* hearings); *Claar v. Burlington N.R.R.*, 29 F.3d 499, 502-05 (9th Cir. 1994) (discussing the trial court's technique of ordering experts to submit serial affidavits explaining the reasoning and methods underlying their conclusions).

The amendment continues the practice of the original Rule in referring to a qualified witness as an "expert." This was done to provide continuity and to minimize change. The use of the term "expert" in the Rule does not, however, mean that a jury should actually be informed that a qualified witness is testifying as an "expert." Indeed, there is much to be said for a practice that prohibits the use of the term "expert" by both the parties and the court at trial. Such a practice "ensures that trial courts do not inadvertently put their stamp of authority" on a witness's opinion, and protects against the jury's being "overwhelmed by the so-called 'experts'." Hon. Charles Richey, *Proposals to Eliminate the Prejudicial Effect of the Use of the Word "Expert" Under the Federal Rules of Evidence in Criminal and Civil Jury Trials*, 154 F.R.D. 537, 559 (1994) (setting forth limiting instructions and a standing order employed to prohibit the use of the term "expert" injury trials).

GAP Report--Proposed Amendment to Rule 702

The Committee made the following changes to the published draft of the proposed amendment to Evidence Rule 702:

1. The word "reliable" was deleted from Subpart (1) of the proposed amendment, in order to avoid an overlap with [Evidence Rule 703](#), and to clarify that an expert opinion need not be excluded simply because it is based on hypothetical facts. The Committee Note was amended to accord with this textual change.
2. The Committee Note was amended throughout to include pertinent references to the Supreme Court's decision in *Kumho Tire Co. v. Carmichael*, which was rendered after the proposed amendment was released for public comment. Other citations were updated as well.
3. The Committee Note was revised to emphasize that the amendment is not intended to limit the right to jury trial, nor to permit a challenge to the testimony of every expert, nor to preclude the testimony of experience-based experts, nor to prohibit testimony based on competing methodologies within a field of expertise.
4. Language was added to the Committee Note to clarify that no single factor is necessarily dispositive of the reliability inquiry mandated by Evidence Rule 702.

2011 Amendments

The language of Rule 702 has been amended as part of the restyling of the Evidence Rules to make them more easily understood and to make style and terminology consistent throughout the rules. These changes are intended to be stylistic only. There is no intent to change any result in any ruling on evidence admissibility.

2023 Amendments

Rule 702 has been amended in two respects:

(1) First, the rule has been amended to clarify and emphasize that expert testimony may not be admitted unless the proponent demonstrates to the court that it is more likely than not that the proffered testimony meets the admissibility requirements set forth in the rule. *See Rule 104(a)*. This is the preponderance of the evidence standard that applies to most of the admissibility requirements set forth in the evidence rules. *See Bourjaily v. United States*, 483 U.S. 171, 175 (1987) (“The preponderance standard ensures that before admitting evidence, the court will have found it more likely than not that the technical issues and policy concerns addressed by the Federal Rules of Evidence have been afforded due consideration.”); *Huddleston v. United States*, 485 U.S. 681, 687 n.5 (1988) (“preliminary factual findings under Rule 104(a) are subject to the preponderance-of-the-evidence standard”). But many courts have held that the critical questions of the sufficiency of an expert’s basis, and the application of the expert’s methodology, are questions of weight and not admissibility. These rulings are an incorrect application of Rules 702 and *104(a)*.

There is no intent to raise any negative inference regarding the applicability of the *Rule 104(a)* standard of proof for other rules. The Committee concluded that emphasizing the preponderance standard in Rule 702 specifically was made necessary by the courts that have failed to apply correctly the reliability requirements of that rule. Nor does the amendment require that the court make a finding of reliability in the absence of objection.

The amendment clarifies that the preponderance standard applies to the three reliability-based requirements added in 2000--requirements that many courts have incorrectly determined to be governed by the more permissive *Rule 104(b)* standard. But it remains the case that other admissibility requirements in the rule (such as that the expert must be qualified and the expert’s testimony must help the trier of fact) are governed by the *Rule 104(a)* standard as well.

Some challenges to expert testimony will raise matters of weight rather than admissibility even under the *Rule 104(a)* standard. For example, if the court finds it more likely than not that an expert has a sufficient basis to support an opinion, the fact that the expert has not read every single study that exists will raise a question of weight and not admissibility. But this does not mean, as certain courts have held, that arguments about the sufficiency of an expert’s basis always go to weight and not admissibility. Rather it means that once the court has found it more likely than not that the admissibility requirement has been met, any attack by the opponent will go only to the weight of the evidence.

It will often occur that experts come to different conclusions based on contested sets of facts. Where that is so, the *Rule 104(a)* standard does not necessarily require exclusion of either side’s experts. Rather, by deciding the disputed facts, the jury can decide which side’s experts to credit. “[P]roponents ‘do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are correct, they only have to demonstrate by a preponderance of evidence that their opinions are reliable... The evidentiary requirement of reliability is lower than the merits standard of correctness.’” Advisory Committee Note to the 2000 amendment to Rule 702, quoting *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d 717, 744 (3d Cir. 1994).

Rule 702 requires that the expert’s knowledge “help” the trier of fact to understand the evidence or to determine a fact in issue. Unfortunately, some courts have required the expert’s testimony to “appreciably help” the trier of fact. Applying a higher standard than helpfulness to otherwise reliable expert testimony is unnecessarily strict.

(2) Rule 702(d) has also been amended to emphasize that each expert opinion must stay within the bounds of what can be concluded from a reliable application of the expert’s basis and methodology. Judicial gatekeeping is essential because just as jurors may be unable, due to lack of specialized knowledge, to evaluate meaningfully the reliability of scientific and other methods underlying expert opinion, jurors may also lack the specialized knowledge to determine whether the conclusions of an expert go beyond what the expert’s basis and methodology may reliably support.

The amendment is especially pertinent to the testimony of forensic experts in both criminal and civil cases. Forensic experts should avoid assertions of absolute or one hundred percent certainty--or to a reasonable degree of scientific certainty--if the methodology is subjective and thus potentially subject to error. In deciding whether to admit forensic expert testimony, the judge should (where possible) receive an estimate of the known or potential rate of error of the methodology employed, based

(where appropriate) on studies that reflect how often the method produces accurate results. Expert opinion testimony regarding the weight of feature comparison evidence (i.e., evidence that a set of features corresponds between two examined items) must be limited to those inferences that can reasonably be drawn from a reliable application of the principles and methods. This amendment does not, however, bar testimony that comports with substantive law requiring opinions to a particular degree of certainty.

Nothing in the amendment imposes any new, specific procedures. Rather, the amendment is simply intended to clarify that Rule 104(a)'s requirement applies to expert opinions under Rule 702. Similarly, nothing in the amendment requires the court to nitpick an expert's opinion in order to reach a perfect expression of what the basis and methodology can support. The Rule 104(a) standard does not require perfection. On the other hand, it does not permit the expert to make claims that are unsupported by the expert's basis and methodology.

Notes of Decisions (1649)

Fed. Rules Evid. Rule 702, 28 U.S.C.A., FRE Rule 702
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[United States Code Annotated](#)[Federal Rules of Evidence \(Refs & Annos\)](#)[Article VII. Opinions and Expert Testimony](#)

Federal Rules of Evidence Rule 703, 28 U.S.C.A.

Rule 703. Bases of an Expert's Opinion Testimony

[Currentness](#)

An expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed. If experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion on the subject, they need not be admissible for the opinion to be admitted. But if the facts or data would otherwise be inadmissible, the proponent of the opinion may disclose them to the jury only if their probative value in helping the jury evaluate the opinion substantially outweighs their prejudicial effect.

CREDIT(S)

([Pub.L. 93-595](#), § 1, Jan. 2, 1975, 88 Stat.1937; Mar. 2, 1987, eff. Oct. 1, 1987; Apr. 17, 2000, eff. Dec. 1, 2000; Apr. 26, 2011, eff. Dec. 1, 2011.)

ADVISORY COMMITTEE NOTES**1972 Proposed Rules**

Facts or data upon which expert opinions are based may, under the rule, be derived from three possible sources. The first is the firsthand observation of the witness with opinions based thereon traditionally allowed. A treating physician affords an example. Rheingold, The Basis of Medical Testimony, 15 Vand.L.Rev. 473, 489 (1962). Whether he must first relate his observations is treated in Rule 705. The second source, presentation at the trial, also reflects existing practice. The technique may be the familiar hypothetical question or having the expert attend the trial and hear the testimony establishing the facts. Problems of determining what testimony the expert relied upon, when the latter technique is employed and the testimony is in conflict, may be resolved by resort to Rule 705. The third source contemplated by the rule consists of presentation of data to the expert outside of court and other than by his own perception. In this respect the rule is designed to broaden the basis for expert opinions beyond that current in many jurisdictions and to bring the judicial practice into line with the practice of the experts themselves when not in court. Thus a physician in his own practice bases his diagnosis on information from numerous sources and of considerable variety, including statements by patients and relatives, reports and opinions from nurses, technicians and other doctors, hospital records, and X rays. Most of them are admissible in evidence, but only with the expenditure of substantial time in producing and examining various authenticating witnesses. The physician makes life-and-death decisions in reliance upon them. His validation, expertly performed and subject to cross-examination, ought to suffice for judicial purposes. Rheingold, *supra*, at 531; McCormick § 15. A similar provision is [California Evidence Code § 801\(b\)](#).

The rule also offers a more satisfactory basis for ruling upon the admissibility of public opinion poll evidence. Attention is directed to the validity of the techniques employed rather than to relatively fruitless inquiries whether hearsay is involved. See Judge Feinberg's careful analysis in *Zippo Mfg. Co. v. Rogers Imports, Inc.*, 216 F.Supp. 670 (S.D.N.Y.1963). See also Blum et al., The Art of Opinion Research: A Lawyer's Appraisal of an Emerging Service, 24 U.Chi.L.Rev. 1 (1956); Bonyng Trademark Surveys and Techniques and Their Use in Litigation, 48 A.B.A.J. 329 (1962); Zeisel, The Uniqueness of Survey Evidence, 45 Cornell L.Q. 322 (1960); Annot., 76 A.L.R.2d 919.

If it be feared that enlargement of permissible data may tend to break down the rules of exclusion unduly, notice should be taken that the rule requires that the facts or data "be of a type reasonably relied upon by experts in the particular field." The language would not warrant admitting in evidence the opinion of an "accidentologist" as to the point of impact in an automobile collision based on statements of bystanders since this requirement is not satisfied. See Comment, Cal.Law Rev.Comm'n, Recommendation Proposing an Evidence Code 148-150 (1965).

1987 Amendments

The amendment is technical. No substantive change is intended.

2000 Amendments

Rule 703 has been amended to emphasize that when an expert reasonably relies on inadmissible information to form an opinion or inference, the underlying information is not admissible simply because the opinion or inference is admitted. Courts have reached different results on how to treat inadmissible information when it is reasonably relied upon by an expert in forming an opinion or drawing an inference. *Compare United States v. Rollins*, 862 F.2d 1282 (7th Cir. 1988) (admitting, as part of the basis of an FBI agent's expert opinion on the meaning of code language, the hearsay statements of an informant), *with United States v. 0.59 Acres of Land*, 109 F.3d 1493 (9th Cir. 1997) (error to admit hearsay offered as the basis of an expert opinion, without a limiting instruction). Commentators have also taken differing views. *See e.g.*, Ronald Carlson, *Policing the Bases of Modern Expert Testimony*, 39 Vand.L.Rev. 577 (1986) (advocating limits on the jury's consideration of otherwise inadmissible evidence used as the basis for an expert opinion); Paul Rice, *Inadmissible Evidence as a Basis for Expert Testimony: A Response to Professor Carlson*, 40 Vand.L.Rev. 583 (1987) (advocating unrestricted use of information reasonably relied upon by an expert).

When information is reasonably relied upon by an expert and yet is admissible only for the purpose of assisting the jury in evaluating an expert's opinion, a trial court applying this Rule must consider the information's probative value in assisting the jury to weigh the expert's opinion on the one hand, and the risk of prejudice resulting from the jury's potential misuse of the information for substantive purposes on the other. The information may be disclosed to the jury, upon objection, only if the trial court finds that the probative value of the information in assisting the jury to evaluate the expert's opinion substantially outweighs its prejudicial effect. If the otherwise inadmissible information is admitted under this balancing test, the trial judge must give a limiting instruction upon request, informing the jury that the underlying information must not be used for substantive purposes. *See Rule 105*. In determining the appropriate course, the trial court should consider the probable effectiveness or lack of effectiveness of a limiting instruction under the particular circumstances.

The amendment governs only the disclosure to the jury of information that is reasonably relied on by an expert, when that information is not admissible for substantive purposes. It is not intended to affect the admissibility of an expert's testimony. Nor does the amendment prevent an expert from relying on information that is inadmissible for substantive purposes.

Nothing in this Rule restricts the presentation of underlying expert facts or data when offered by an adverse party. *See Rule 705*. Of course, an adversary's attack on an expert's basis will often open the door to a proponent's rebuttal with information that was reasonably relied upon by the expert, even if that information would not have been discloseable initially under the balancing test provided by this amendment. Moreover, in some circumstances the proponent might wish to disclose information that is relied upon by the expert in order to "remove the sting" from the opponent's anticipated attack, and thereby prevent the jury from drawing an unfair negative inference. The trial court should take this consideration into account in applying the balancing test provided by this amendment.

This amendment covers facts or data that cannot be admitted for any purpose other than to assist the jury to evaluate the expert's opinion. The balancing test provided in this amendment is not applicable to facts or data that are admissible for any other purpose but have not yet been offered for such a purpose at the time the expert testifies.

The amendment provides a presumption against disclosure to the jury of information used as the basis of an expert's opinion and not admissible for any substantive purpose, when that information is offered by the proponent of the expert. In a multi-party case, where one party proffers an expert whose testimony is also beneficial to other parties, each such party should be deemed a "proponent" within the meaning of the amendment.

GAP Report--Proposed Amendment to Rule 703

The Committee made the following changes to the published draft of the proposed amendment to Evidence Rule 703:

1. A minor stylistic change was made in the text, in accordance with the suggestion of the Style Subcommittee of the Standing Committee on Rules of Practice and Procedure.
2. The words "in assisting the jury to evaluate the expert's opinion" were added to the text, to specify the proper purpose for offering the otherwise inadmissible information relied on by an expert. The Committee Note was revised to accord with this change in the text.
3. Stylistic changes were made to the Committee Note.
4. The Committee Note was revised to emphasize that the balancing test set forth in the proposal should be used to determine whether an expert's basis may be disclosed to the jury either (1) in rebuttal or (2) on direct examination to "remove the sting" of an opponent's anticipated attack on an expert's basis.

2011 Amendments

The language of Rule 703 has been amended as part of the general restyling of the Evidence Rules to make them more easily understood and to make style and terminology consistent throughout the rules. These changes are intended to be stylistic only. There is no intent to change any result in any ruling on evidence admissibility.

The Committee deleted all reference to an "inference" on the grounds that the deletion made the Rule flow better and easier to read, and because any "inference" is covered by the broader term "opinion." Courts have not made substantive decisions on the basis of any distinction between an opinion and an inference. No change in current practice is intended.

Notes of Decisions (413)

Fed. Rules Evid. Rule 703, 28 U.S.C.A., FRE Rule 703
Including Amendments Received Through 4-1-2025

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16.4 Manslaughter—Involuntary (18 U.S.C. § 1112)

The defendant is charged in [Count _____ of] the indictment with involuntary manslaughter in violation of Section 1112 of Title 18 of the United States Code. [Involuntary manslaughter is the unlawful killing of a human being without malice aforethought and without an intent to kill.] For the defendant to be found guilty of that charge, the government must prove each of the following elements beyond a reasonable doubt:

First, the defendant committed an act that might produce death;

Second, the defendant acted with gross negligence, defined as wanton or reckless disregard for human life;

Third, the defendant's act was the proximate cause of the death of the victim. A proximate cause is one that played a substantial part in bringing about the death, so that the death was the direct result or a reasonably probable consequence of the defendant's act;

Fourth, the killing was unlawful;

Fifth, the defendant either knew that such an act was a threat to the lives of others or knew of circumstances that would reasonably cause the defendant to foresee that such an act might be a threat to the lives of others; and

Sixth, the killing occurred at [*specify place of federal jurisdiction*].

Comment

With respect to the first and second elements, see *United States v. Garcia*, 729 F.3d 1171 (9th Cir. 2013).

While the third element is not in the statute, it is required by *United States v. Main*, 113 F.3d 1046, 1049-50 (9th Cir. 1997) (“When the jury is not told that it must find that the victim’s death was within the risk created by the defendant’s conduct an element of the crime has been erroneously withdrawn from the jury . . . It is not relevant that § 1112 does not expressly mention proximate cause.”).

As to the fourth element, if there is evidence of justification or excuse, the following language should be added: “A killing is unlawful within the meaning of this instruction if it was [not justifiable] [not excusable] [neither justifiable nor excusable].”

While the fifth element is not in the statute, it is required by *United States v. Keith*, 605 F.2d 462, 463 (9th Cir. 1979).

As to the sixth element, whether the crime alleged occurred at a particular location is a question of fact. *United States v. Warren*, 984 F.2d 325, 327 (9th Cir. 1993). Whether the location is within the special maritime and territorial jurisdiction of the United States or a federal prison is a question of law. See *United States v. Gipe*, 672 F.2d 777, 779 (9th Cir. 1982).

The trial judge may be obligated to give an instruction on involuntary manslaughter in a murder case even when the defense does not offer the instruction. In *United States v. Anderson*, 201 F.3d 1145, 1150 (9th Cir. 2000), the Ninth Circuit held that it was plain error for the court not to instruct the jury on involuntary manslaughter, even though the defendant had not requested such an instruction, because there was evidence in the record to support the theory that the killing was accidental.

A two-step test applies to determine whether the trial judge is obligated to give an instruction on involuntary manslaughter in a murder case. *United States v. Arnt*, 474 F.3d 1159, 1163 (9th Cir. 2007). The first step is a legal question: “Is the offense for which the instruction is sought a lesser-included offense of the charged offense?” *Id.* “The second step is a factual inquiry: Does the record contain evidence that would support conviction of the lesser offense?” *Id.* Voluntary and involuntary manslaughter are lesser included offenses of murder. *Id.* However, they are not lesser included offenses of felony murder. *United States v. Miguel*, 338 F.3d 995, 1004-06 (9th Cir. 2003).

Revised June 2019

**UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

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